Digitized by the Internet Archive
in 2010 with funding from
University of Toronto

http://www.archive.org/details/montrealmedicalj31mont

P Med M

THE
Montreal Medical Journal

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR.

GEO. E. ARMSTRONG.
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,
F. J. SHEPHERD.

WITH THE COLLABORATION OF

C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW,
T. J. W. BURGESS,

J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT.

KENNETH CAMERON,
C. W. WILSON,
A. G. NICHOLLS,
W. W. CHIPMAN,

VOLUME XXXI.

405626
9.9.42

MONTREAL:
PRINTED BY THE GAZETTE PRINTING COMPANY.

R
11
M937
v.31

LIST OF CONTRIBUTORS TO VOLUME XXXI.

Abbott, Maude E., M.D.
Adami, J. G., M.D.
Armstrong, G. E., M.D.

Bell, James, M.D.
Birt, Arthur, M.D.
Blackader, A. D., M.D.
Boggs, R. W., M.D.
Buller, Frank, M.D.
Byers, W. G. M., M.D.

Cameron, Kenneth, M.D.
Campbell, G. Gordon, M.D.
Charlton, Geo. A., M.D.
Christie, F. J., M.D.
Church, Charles H., M.D.
Clouston, J R., M.D.
Craig, Robert, M.D.

Deeks, W. E., M D.

England, W. S., M.D.

Finley, F. G., M.D.
Forbes, A. Mackenzie, M.D.
Forshaw, C. F., F.R.S.I.
Fry, F. M., M.D.

Garrow, A. E., M.D.
Grant, Sir James, M.D.
Grimmer, G. K., M.D.

Hamilton, W. F., M.D.
Hattie, W. H., M.D.
Howard, Campbell P., M.D.

Johnston, Wyatt, M.D.
Jones, F. E., M.D.

Keenan, C. B., M.D.
Knopf, S. A., M.D.

Lockhart, F. A. L., M.D.

Mackenzie, Ridley, M.D.
Martin, C. F., M.D.
McAuley, A. C., M.D.
McCrae, John, M.D.
McKay, Malcolm, M.D.
McKenzie, R. Tait, M.D.
Mills, Wesley, M.D.

Nicholls, Albert G., M.D.

Ogilvy, Charles, M.D.
Orr, A. E., M.D.
Osler, William, M.D.

Robertson, E. A., M.D.
Robinson, Byron, M.D.
Robinson, N. Preston, M.D.
Ross, George T., M.D.
Russel, Colin K., M.D.

Secord, E. R., M.D.
Shepherd, F. J., M.D.
Smith, A. Lapthorn, M.D.
Stewart, James, M.D.
Stewart, John, M.B.
Stewart, W. Grant, M.D.

Todd, J. L., M D.

Von Eberts, E. M., M.D.

Webster, R. E., M.D.
Wolf, Charles G. L., M.D.
Woolley, Paul G., M.D.

McGILL MEDICAL SOCIETY OF UNDERGRADUATES.

Campbell, J. A. E.
Cox, R. C.
Gardner, W. A.
McKenzie, D. W.
Peters, O. R.
Thomas, Stanley, P.

INDEX TO VOLUME XXXI.

- ABBOTT, MAUDE E., B.A., M.D., an historical sketch of the Medical Faculty of McGill University, 561
- Abortion, early, extensive laceration of the cervix as an important factor in, 277
- Abscess, subdiaphragmatic, (Soc. Pro.), 361
- Action and therapeutic employment of alcohol, being an epitome of recent contributions to the subject, 951
- Adami, J. G., M.D., Pictou cattle disease, 105
  - The art of healing and the science of medicine, 16
- Addison's disease cured by suprarenal extract, 509
  - followed by death, a case of, (Soc. Pro.), 972
- Address before the Tuberculosis Association of Canada, 321
  - in medicine delivered before the Canadian Medical Association, 684
  - in surgery delivered before the Canadian Medical Association, 700
  - on surgery, 481
  - Presidential, delivered before the Canadian Medical Association, 673
  - to the graduating class in medicine, 1902, 415
- Adrenal, infarction of the, 435
- Against tuberculosis, (Edit.), 312
- Alcohol, on the action and therapeutic employment of, being an epitome of recent contributions on the subject, 951
- American Medico-Pyschological Association, (Edit.), 208
- Anastomosis between gall bladder and duodenum, inflammatory, (Soc. Pro.), 902
- Angioneurotic œdema, 507
- Anti-tuberculous crusade, the mission of societies for the prevention of consumption in the, 241
- Antiseptics, the toxic action of, 170
- Antistreptococcus serum, in severe cases of scarlet fever, preliminary note upon the employment of an, 753
- Anti-vaccinators, a lesson for the, (Edit.), 210
- Appendicitis simulating tubal gestation, 35
- Appendix, foreign bodies in the vermiform, 765
- Armstrong, Geo. E., M.D., address on surgery, 481
  - The treatment of general septic peritonitis, 87
- Artificial feeding of infants, resume of the more recent advances in the, 491
- Art of healing and the science of medicine, 16

- BACTERIOLOGICAL examination of milk samples, a simple method for, 124
- Bell, James, M.D., a case of multiple myeloma, 336
  - Foreign bodies in the vermiform appendix, 765
- Biliary passages and gall-bladder, the medical treatment of diseases of the, 922
- Birt, Arthur, M.D., senile peritoneal tuberculosis, 758
- Blackader, A.D., M.D., on the action and therapeutic employment of alcohol, being an epitome of recent contributions to the subject, 951
  - resume of the more recent advances in the artificial feeding of infants, 491.
  - the medical treatment of diseases of the biliary passages and gall-bladder, 922
- Blood examinations, notes on the diagnostic value of, 161
  - pressure in diseased conditions, clinical notes on, 833
  - stain, notes on a rapid, 503
- Boggs, R. W., M.D., extension laceration of the cervix as an important factor in early abortion, 277

BOOK REVIEWS,

  - Albert—Diagnosis of surgical diseases, 800
  - Anders—Practice of medicine, 146
  - Ballance—The healing of nerves, 744
  - Bergey—Hygiene, 147
  - Bryant—Operative surgery, 746

  - Bulkley—Eczema, 743
  - Cattell—International clinics, 199, 514
  - Carter—Elements of practical medicine, 799
  - Curschmann—Nothnagels, encyclopedia, 309
  - De Meric—Syphilis and other venereal diseases, 145
  - Emery—Bacteriological diagnosis, 743
  - Fischer—Infant feeding in health and disease, 540
  - Friedrich—Rhinology, laryngology, etc., 308
  - Garrigues—Obstetrics, 898
  - Gray—Anatomy, 310
  - Gould—American year book of medicine and surgery for 1902, 803
  - Hare—Progressive medicine, 538
  - Hektoen—Amer. textbook of pathology, 149
  - Hirst—Obstetrics, 145
  - Johns Hopkins' hospital reports, 309
  - Jones—Gonorrhœal arthritis, 803
  - Lake—Laryngeal phthisis, 308
  - Lockwood—Practice of medicine, 745
  - Muirhead—The causes of death among the insured in the Scottish Widows' Fund and Life Assurance Society from 1874 to 1894 inclusive, 437
  - Park—Treatise on surgery, 148
  - Robinson—The peritoneum, 148
  - Rotch—Pediatrics, 537
  - Syphilis, a symposium, 802
  - The international medical annual, 539
  - The practical medicine series of year books, 541
  - Thornton—Dose book and manual of prescription writing, 802
  - Transactions of the American Climatological Society, 799
  - Transactions of the American Dermatological Association, 802
  - Transactions of the Association of American Physicians, 803
  - Visiting lists for 1903, 971
  - Webster—Human placentation, 196
  - White—Materia medica, pharmacology, etc., 537
  - Zuckerkandl—Operative surgery, 745
- Buller, Frank, M.D., a case of recent acute suppuration of the cornea successfully treated after ligation of the canaliculi, 186
  - Semi-auto-etherization, 878
- Byers, W. G. M., M.D., hole in the macula lutea, 505
  - On the ocular manifestations of systemic gonorrhœa, 863

- CALCULUS pyonephritis (Soc. Pro.), 367
- Cameron, Kenneth, M.D., a case of cardiac arrhythmia, 340
- Campbell, G. Gordon, M.D., an anomalous case of leukæmia, 272
- Campbell, J. A. E., pain and its significance in diagnosis, 471
- Canada Medical Act, 344
- Canadian Field Hospital, (Edit.), 152
  - Medical Association, (Edit.), 314, 450
  - Medical literature, 140, 191, 355, 790
- Carcinoma of the stomach, two cases of, (Soc. Pro.), 440
- Cardiac Arrhythmia, a case of, 340
- Cattle disease, Pictou, 105
- Cerebritis, local, of the first and second frontal convolutions, Jacksonian epilepsy, aphasia, trephined, improved, 727
- Charlatanism, past and present, 381
- Charlton, Geo. A., M.D., preliminary note upon the employment of an antistreptococcus serum in severe cases of scarlet fever, 753
- Chauvinism in medicine, 684
- Cholelithiasis, (Soc. Pro.), 442, 983
- Christie, F. J., M.D., myiasis aurium, 785
- Church, Charles H., M.D., some observations on conditions present in schools of Montreal, 182
- Civic hospital for infectious diseases, (Edit.), 910
- Claudication, intermittent, 81
- Clinical notes, 511
- Clouston, J. R., M.D., the country practitioner of to-day, 776
- Congenital umbilical hernia, an unusual case of, (Soc. Pro.), 907
  - unilateral absence of kidney, nephritis in, (Soc. Pro.), 905
- Cornea, a case of recent, acute, suppuration of the, successfully treated after ligation of the canaliculi, 186
- Cor biloculare, (Soc. Pro.), 906
- Correspondence, No. X, Canadian Field Hospital, 444, 542
- Country practitioner of to-day, the, 776
- Cox, R. C., modern bullet, its effects and their treatment, 229
- Craig, Robert, M.D., a case of epilepsy apparently of nasal origin, 284
- Curvature of the spine, the influence of school life on, 112

- DAILY medical inspection of schools, (Edit.), 205
- Deeks, W. E., M.D., Addison's disease cured by suprarenal extract, angioneurotic œdema, 507, 509
- Deformities of the nose, the subcutaneous injection of parrafin wax in correcting, 843
- Demonstration of animals operated on, with a consideration of their significance for medicine, (Soc. Pro.), 363
- Dislocation of the hip, congenital, with notes of three cases, 849
- Distochia due to short cord, 739

ECLAMPSIA, the etiology of, (Soc. Pro.), 973
three cases of in which the convulsions were promptly arrested by the hypodermic injection of veratrum viride, 30
Ectopic gestation considered clinically, 867
Two cases of, 38
Editorial staff, on a retirement from the, 378
England, W. S., M.D., case reports, 724
Hemihypertrophy with multiple fibromata, 856
Enterolith (Soc. Pro.), 901
Epilepsy, a case of, apparently of nasal origin, 284
Ether, the use of hyoscine before the administration of, 429
Evans, David, J., M.D., resume of recent literature on the toxæmia of pregnancy, 941

FINLEY, F.G., M.D., myasthenia gravis, 498.
Fœtus amorphous anideus, a case of, 433
Forbes, A. Mackenzie, M.D., intracutaneous vaccination, 289
Foreign bodies in the vermiform appendix, 765
Forshaw, C. F., LL.D., F.R.S.I., case of tumour of the superior maxilla, 783
Fracture of the ribs followed by emphysema with fatal termination, (Soc. Pro.). 973
Fry, F. M., M.D., notes on a rapid blood stain, 503
Friedreich's ataxia, (Soc. Pro.), 900

GALL-BLADDER, and bile ducts, the diagnosis of diseases of, 913
the medical treatment of diseases of the biliary passages and, 922
Gardner, W. A., the early history and prophylaxis of syphilis, 69.
Garrow, A. E., M.D., congenital dislocation of the hip with notes of three cases, 849
Glioma, subcortical, of the lower part of the left ascending frontal convolution successfully removed. A contribution to the nature of speech disturbance arising from lesion in this situation, 1
Gonorrhœal infection, general, with illustrative cases, 96
Gonorrhœa, on the ocular manifestations of systemic, 863
Grant, Sir James, M.D., address before the Tuberculosis Association of Canada, 321
Grimmer, G. K., M.D., the subcutaneous injection of parrafin wax in correcting deformities of the nose, 843

HAMILTON, W. F., M. D., a case of purpura with recurrent attacks, 875.
General gonorrhœal infection with illustrative cases, 96
the value of X-rays as a diagnostic agent in thoracic disease, 933
Hattie, W. H., M.D., mental disturbances during the puerperium, 710
Healing, the art of and the science of medicine, 16
Hemihypertrophy with multiple fibromata, 856
Hip, congenital dislocation of the, with notes of three cases, 849
Hip-joint disease, the mechanical treatment of, 175
Historical sketch of the Medical Faculty of McGill University, 561
Hole in the macula lutea, 505
Howard, Campbell P., M.D., a case of quartan malaria, 179
Hyoscine in ether administration, (Edit.), 453
The use of, before the administration of ether, 429

INFARCTION of the adrenal, 435.
Intermittent claudication, 81
International catalogue of scientific literature, (Edit.), 824

JOHNSTON, WYATT, M.D., a simple method for bacterial examination of milk samples, 124
Jones, F. E., M.D., a simple method for bacteriological examination of milk samples, 124
Journal of Obstetrics and Gynæcology of the British Empire, (Edit.), 153

KEENAN, C.B., M.D., a case of multiple myeloma, 336.
Notes of a regimental doctor in a mounted infantry corps, 389
Knopf, S. A., the mission of societies for the prevention of consumption in the anti-tuberculous crusade, 241

LABOUR Normal, 770.
Laceration of the cervix as an important factor in early abortion, 277
Lactation, massage of the breasts during, 740
Leukæmia, an anomalous case of, 272
Liverpool school of tropical medicine, on the work accomplished, and its expeditions to the West Coast of Africa, 719
Lockhart, F. A. L., M.D., ectopic gestation considered clinically, 867
Longevity, 155
Lupus treated by X-rays, (Soc. Pro.), 370

MACKENZIE, Ridley, M.D., a case of fœtus amorphous anideus, 433.
Macula lutea, hole in the, 505
Malaria, a case of quartan, 179
  from marsh poison to mosquito bite, 221
Malignant pustule, 267
Martin, C. F., M.D., address to the graduating class in medicine, 1902, 415
  Charlatanism, past and present, 381
  Notes on the diagnostic value of blood examinations, 161
Massage, 460
McAuley, A. C., M.D., report on the cases of typhoid fever treated in the Royal Victoria Hospital during the year 1901, 256
McCrae, John, M.D., a case of fœtus amorphous anideus, 433
  Discussion on vaccination, the bacteriology of the skin and of the glycerinated lymphs, 287
McGill Medical Library Report, 211, 454, 827
McKay, Malcolm, M.D., report on the cases of pneumonia admitted to the Royal Victoria Hospital during the year 1901, 129
McKenzie, D. W., longevity, 155
McKenzie, R. Tait, M.D., the influence of school life on curvature of the spine, 118
McPhedran, Alexander, M.B., the diagnosis of diseases of the gall-bladder and bile ducts, 913
Mechanical treatment of hip-joint disease, 175
Medical Council for Canada, the establishment of a, (Edit.), 374
  Faculty of McGill University, an historical sketch of the, 561
Mental disturbances during the puerperium, 710
Milk samples, a simple method for bacteriological examination of, 124
Mills, Wesley, M.D., reflexes—the ingoing impulses and their psychic correlatives, 401
Modern bullet, its effects and their treatment, 229
Montreal General Hospital, the rise of the 1816-1822, 564
  Medical Institution, the origin of the and of the Medical Faculty of McGill University, 572
  Medico-Chirurgical Society. (Edit.), 65
Morbus coxæ, (Soc. Pro.), 438
Myasthenia gravis, 498
Myeloma, a case of multiple, 336
Mylasis aurium, 785

NICHOLLS, Albert G., M.D., a case of tuberculosis primarily of intestinal origin combined with tertiary syphilis, 327
Notes of a regimental doctor in a mounted infantry corps, 389

OBITUARY—Bucke, Richard Maurice M.D., 216.
  Christie, Thomas, M.P., M.D., 982
  Johnston, Professor Wyatt Galt, 554
  Muir, William Scott, M.D., 318
Ocular manifestations of systemic gonorrhœa, on the, 863
Ogilvy, Charles, M.D., the mechanical treatment of hip-joint disease,
Orr, A. E., M.D., clinical notes on blood pressure in diseased conditions, 833
Osler, William, M.D., address in medicine delivered before the Canadian Medical Association, 684
  Intermittent claudication, 81
Ovarian vascular circle, the, 420

PAIN and its significance in diagnosis, 471.
Pancreatitis, acute, brief notes on a case of, (Soc. Pro.), 973
Patella, fractured, with unusual history, (Soc. Pro.), 371
Peritoneal tuberculosis, senile, 758
Peritonitis, the treatment of general septic, 87
Peters, O. R., massage, 460
Pneumonia, report of the cases of admitted to the Royal Victoria Hospital during the year 1901, 129
Pregnancy, resume of recent literature on the toxæmia of, 941
Presidential address delivered before the Canadian Medical Association, 673
Provincial Medical Board and preliminary education for the study of medicine, (Edit.), 822
Pseudo - progressive muscular dystrophy, (Soc. Pro.), 369
Puerperium, mental disturbances during the, 710
Pulmonary disease, some variations from the type in, 280
Purpura, with recurrent attacks, a case of, 875

RECTOVAGINAL fissure due to cancer of the uterus, (Soc. Pro.), 904
Reflexes—the ingoing impulses and their psychic correlatives, 401
Resume of recent literature on the toxæmia of pregnancy, 941
Report of the cases of pneumonia admitted to the Royal Victoria Hospital during the year 1901, 129
  on the cases of typhoid fever treated in the Royal Victoria Hospital during the year 1901, 256
Resume of the more recent advances in the artificial feeding of infants, 491
Retirement of Dr. Robt. Craik, (Edit.), 151

RETROSPECT,
  Albuminous expectoration, 515
  Amblyopia, toxic, 46

Arthritis, primary pneumococcus, 43
Arsenic, on the uses and abuses of, 517
Ascites, the surgical treatment of, 733
Bacterial entrance and exit, 891
Cæsarean section and the indication for craniotomy, 137
Cardiac hypertrophy and dilatation, 298
Chorea, on the treatment of, 531
Club foot, operative treatment of paralytic, 42
Corneal lesions, 304
Diabetes mellitus, the relations of to disease of the pancreas, 884
Diarrhœa in children, on the treatment of summer, 524
Diet in granular kidney, 966
Diversion of the blood from the portal vein into the vena cava, 887
Earache in children, 534
Eclampsia, thyroid extract in, 738
Eye symptoms in extra ocular disease, 888
Gall-bladder, traumatic rupture of the, 188
Genitalia, prolapse of the internal, 354
Gonorrhœa, ocular manifestations of, 45
Gout, on the treatment of, 528
Hemeralopia, 306
Herpes zoster, 132
How to recognize tubercular changes in the lungs by percussion, 884
Hysterectomy, 352
  abdominal, for puerperal infection, 138
Jequirity, 306
Kidney, operations on the, 189
Myelopathic albumosuria, 967
Nephropexy, the technique of, 190
Ocular therapeutics, 889
Ophthalmias of the newly born and their prophylaxis, 736
Paratyphoid fever, 881
Peritoneal tuberculosis, treatment of, 41
Periotomy in various eye diseases, 47
Pneumococcus arthritis, 787
Pneumothorax, spontaneous non-tuberculous, 788
Pregnancy after removal of the ovaries, 737
Prostate, extirpation of the, 732
Puerperal infection, abdominal hysterectomy for, 138
Reduction of shoulder dislocations without an anæsthetic, 886
Relationship of cholelithiasis to diseases of the pancreas, 48
Renal calculus, treatment of, 43
Sarcoma of the optic nerve sheath, 307
Sympathetic ophthalmia, 304
Syphilis, on the treatment of, 526
Thiosinamine, its pharmacology and therapeutic uses, 522
Treatment of lupus and tuberculous abscess with hydrogen peroxide, 188
Tubercular peritonitis, 786
Urotropine, on the action of, 520
Uterine cough, 353
  inversion, 135
  wall, slough of the, 136
Robertson, E. A., M.D., The use of hyoscine before the administration of ether, 429
Robinson, Byron, M.D., the ovarian vascular circle, 420
Robinson, N. Preston, M.D., normal labour, 770
Rodent ulcer treated by X-rays, (Soc. Pro.), 972
Ross, Geo. T., M.D., clinical notes, 511
Russel, Colin K., M.D., some variations from the type in pulmonary disease, 280

SARCOMA cured by repeated operations, (Soc. Pro.), 439
Scarlet fever, preliminary note upon the employment of an antistreptococcus serum in severe cases of, 753
School life, the influence of on curvature of the spine, 112
Schools of Montreal, some observations on conditions present in the, 182
Secord, E. R., M.D., appendicitis simulating tubal gestation, 35
Semi-auto-etherization, 878
Shepherd, F. J., M.D., Presidential address before the Canadian Medical Association, 1902, 673
Smith, A. Lapthorn, M.D., three cases of eclampsia in which the convulsions were promptly arrested by the hypodermic injection of veratrum viride, 30
Societies for the prevention of consumption, the mission of, in the anti-tuberculous crusade, 241
Some observations on conditions present in schools of Montreal, 182
Spinal localization in connection with spinal fracture, (Soc. Pro.), 440
Stewart, James, M.D., a case of subcortical glioma of the lower part of the left ascending frontal convolution successfully removed. A contribution to the nature of the speech disturbance arising from lesions in this situation, 1
Stewart, John, M.B., address in surgery delivered before the Canadian Medical Association, 700
Stewart, W. Grant, M.D., an anomalous case of leukæmia, 272
Studies from the Royal Victoria Hospital, (Edit.), 549
Subcutaneous injection of paraffin wax in correcting deformities of the nose, 843

Suppuration of the cornea, a case of recent acute, successfully treated after ligation of the canaliculi, 186
Suprarenal extract, Addison's disease cured by, 509
Syphilis, tertiary, a case of tuberculosis primarily of intestinal origin combined with, 327
  The early history and prophylaxis of, 69

THOMAS, Stanley, P., malaria from marsh poison to mosquito bite, 221
Thoracic disease, the value of X-rays as a diagnostic agent in, 933
Todd, J. L., M.D., on the work accomplished by the Liverpool School of Tropical Medicine and its expeditions to the West Coast of Africa, 719
Tubal gestation, appendicitis simulating, 35
Tuberculosis, a case of, primarily of intestinal origin combined with tertiary syphilis, 327
Tuberculosis, on the prevention of, (Edit.), 978
  senile peritoneal, 758
Tuberculous tumour involving ileum and cæcum, 724
Tumour of the superior maxilla, case of, 783
Typhoid fever, report on the cases of, treated in the Royal Victoria Hospital during the year 1901, 256
  perforation, recovery after operation for, (Soc. Pro.), 441
Typhus fever, sporadic, two cases of, (Soc. Pro.), 902

UTERINE polypus, (Soc. Pro.), 900.

VACCINATION, discussion on, the bac bacteriology of the skin and of the glycerinated lymphs, 287
  Intracutaneous, 289
Veratrum veride, three cases of eclampsia in which the convulsions were promptly arrested by the hypodermic injection of, 30
Vesical calculus with pyonephritis in a child, (Soc. Pro.), 439
Virchow's successor, (Edit.), 977
Von Eberts, E. M., M.D., malignant pustule, 267

WEBSTER, R. E., M. D., two cases of etopic gestation, 38.
Wolf, Charles G. L., M.D., the toxic action of antiseptics, 170
Woolley, Paul G., M.D., infarction of the adrenal, 435

X-RAYS as a diagnostic agent in thoracic disease, the value of, 933

THE

MONTREAL MEDICAL JOURNAL.

Vol. XXXI. JANUARY, 1902. No. 1.

Original Communications.

A CASE OF SUBCORTICAL GLIOMA OF THE LOWER PART OF THE LEFT ASCENDING FRONTAL CONVOLUTION SUCCESSFULLY REMOVED: A CONTRIBUTION TO THE NATURE OF THE SPEECH DISTURBANCE ARISING FROM LESIONS IN THIS SITUATION.

BY

James Stewart, M.D., of Montreal,

Professor of Medicine and Clinical Medicine, McGill University; Physician to the Royal Victoria Hospital.

L. P., aged 37, a painter, first came under observation on the 6th of December, 1900. His complaints were of temporary attacks of complete loss of speech. He was, with the exception of occasional slight frontal headaches, as far as he could judge, in perfect health up to the 2nd of August, 1900, when he was suddenly seized with an attack solely characterized by absolute loss of speech, being unable to utter a word or sound of any kind—a condition of perfect mutism. This state lasted about 30 minutes. It was not attended or followed by any other symptoms of any kind. About the middle of September, or six weeks later, he had a precisely similar attack, lasting about the same length of time. Up to the time of his admission, he had in all ten such seizures, the last one occurring on the morning of his admission to the hospital. He arrived at the railway station, and after getting into a cab, he was unable to direct the cabman where to drive him. Like the previous attacks it passed off in the course of about half an hour. During the attacks he understood perfectly what was said to him, and knew what he desired to utter. He has frequently tested whether he was able to read and write during the attacks, and is confident that he was able to accomplish both acts as well as he ever could.

He is not now nor has he been at any time troubled with either nausea, vomiting or headache.

During the last few attacks, he has felt a sensation of numbness or deadness in the index and middle fingers of the right hand.

It is a very slight sensation and does not last as long as the loss of speech. It is not felt till after the latter sets in, and disappears before it. At no period has there been any muscular weakness during or after the periods of loss of speech, neither has he observed double vision.

He has always been healthy and regular in his habits.

There is no history of syphilis.

His father died at 60, from heart disease. His mother is living and in good health. There is no family tendency to malignant disease, to tuberculosis, or to rheumatism. There is no neurotic family history.

His condition on admission on the 6th of December, 1900.

He is a well nourished man, aged 37 years, of medium stature, active in all his movements. He is fairly well educated, and possessed of good intelligence. He sleeps well.

Nervous System:—During the two days that he spent in the hospital at this time, there was no recurrence of the attacks of mutism. Dr. Birkett made a very careful examination of the larynx, and found no disturbance of either the abductors or adductors. Both were found to move freely on phonation.

All the functions of the central nervous system were normal.

There was no motor or sensory disturbance of any part.

A careful examination into the different forms of the muscular sense did not elicit any sign of abnormality.

The organic reflexes of swallowing, defecation and micturition were not in any way interfered with.

The knee jerks were found slightly exaggerated, and all the superficial reflexes except the pharyngeal were present.

Examination of the eyes did not reveal any deviation from the normal in either the external or internal muscles, nor in the optic nerve.

The urine was free from albumin and sugar, and was found normal in other respects.

A careful examination of the remaining organs and systems failed to reveal any signs or symptoms of disease.

He was discharged at his own urgent request after remaining in the hospital for 48 hours.

It was thought likely that the condition was one of functional (hysterical) mutism. The loss of the pharyngeal reflex in addition to the intermittent mutism, were looked upon as a combination of symptoms that were more likely due to functional than organic disturbance. Had more consideration been given to the slight, but still clearly defined sensation of numbness accompanying the more recent attacks, this error would have been avoided.

Condition since his discharge from the hospital and his re-admission on the 24th of January, 1901.

Three days subsequent to his discharge, another attack of "speechlessness" similar in its character and duration to the previous attack, was experienced by him and up to a week before his re-admission, similar attacks were frequent. For a week previous to his re-admission he had no disturbance of speech. He was quite clear mentally, during the attack, knowing well what words he would like to say, but was unable to utter them.

On the 3rd of January, he had "an attack of spasmodic jerking of the muscles over the right lower jaw," lasting a few seconds. At the same time he felt a numbness and weakness in the right arm. These symptoms, he says, have lasted, although in a much diminished degree, up to the present. Several minor attacks of spasm of the muscles of the lower part of the face, have recurred, but all less marked than the initial one of the third of January. The numbness he refers mainly to the hand and forearm. It is always more marked during the morning hours. There is no subjective disturbance of sensation in the right lower limb.

He complained of his sight failing, but was still able to read fine reading type. During the attack of facial spasm on the 3rd of January, he was blind for a few seconds in the right eye. From January 1st, and up to his re-admission, headache, both frontal and vertical, has been often present. Frequently it is so severe at night, that he has been unable to sleep.

Vomiting has been present at rare intervals.

Condition on the 25th of January, the day after his re-admission.

Nervous System:—His mental state is in every respect normal.

Speech:—There is a very definite dysarthria, words beginning with v, g, k, s, b, p, w, are pronounced with difficulty. At times he has trouble in recalling certain words, but this disability is on some days not present and was not at any period an obtrusive symptom.

It might with truth be said to be only a slightly exaggerated condition of a not infrequent normal state.

He had no difficulty in understanding what was said to him. At this period he was able to write and read both printed and written sentences. He recognized objects of various kinds quickly and named them correctly, although more or less imperfectly from the disability of articulation. His gestures were found to be correct. There was an appreciable difference between the strength of the muscles of both the upper and lower extremities, those on the right being weaker than those on the left. In the case of the lower limbs the difference was not more than barely appreciable. He, however, maintained that he was distinctly conscious of a weakness in the limbs on the right side. He complained of a more or less constant sensation of deadness or numbness in the right fore-arm and hand, and occasionally of a similar sensation in the left forearm and hand. There was no objective disturbance of sensation in the extremities or elsewhere.

Eyes:—Dr. Buller found a well marked double optic neuritis. This condition was about equally present in each eye.

The pupils were medium sized, equal and reacted normally to both light and accommodation. There was no diplopia or other evidence of ocular paralysis.

Facial Nerve:—Two pronounced and distinctive symptoms, pointing to disturbance of the cortical origin of the right facial were found present, and both persisted. They were:—(1st) An intermittent, clonic spasm of the muscles of the lower part of the right side of the face. The spasms occurred several times a day, and sometimes an interval of two or three days elapsed between them. They lasted from a few seconds to a few minutes, and drew the right angle of the mouth outwards, and at times slightly upwards. (2) There was a weakness of the muscles of the lower part of the right face, the angle of the mouth on this side being lower and the naso-labial fold well night obliterated. On voluntary movement of the two sides of the face, the difference in strength of the corresponding muscles was very striking. The difference between the two sides was mere pronounced from voluntary than from emotional movement.

The Hypoglossal Nerve:—On his re-admission it was observed that the tongue was protruded to a slight extent to the right side; as this condition subsequently increased, it was noticed that after each facial spasm there was an increase of the weakness of the right half of the tongue. When the tongue was protruded, and even when at rest in the mouth, its right half was the seat of tremor. After each attack of spasm of the facial muscles, the paralysis was more evident than formerly. After a period of freedom from spasm, the muscles would regain to a slight extent the power lost, but as a rule there was always super-added to the weakness a further degree of disability after each facial spasm.

The other cranial nerves did not show any evidence of either cortical or peripheral disturbance.

Reflexes:—Both knee jerks were slightly exaggerated, the right being a little more so than the left.

All the superficial reflexes were normal. There was no interference with the organic reflexes. There was no evidence of disturbance of function elsewhere than in the nervous system, the temperature, respiration and pulse remaining normal.

There was tenderness on percussion, and a persistent increase of temperature of three-fifths of a degree Fah. over the left side of the skull.

Course of events up to the day of operation, March 9th, 1901.

Spasms:—The spasms of the muscles of the lower part of the right face, continued to recur at irregular intervals. There were rarely more than one or two such spasms in any one day. Sometimes an interval of three or four days elapsed between them. Their duration and extent did not differ in any essential degree from those already described.

Paralytic Phenomena:—The paralysis of the lower branches of the right facial nerve and of the right half of the tongue, continue to increase in depth. It was always observable that both paralytic states were worse after an attack of spasm. The transient weakness of the right hand and arm previously observed as occurring after attacks of facial spasm is less pronounced. The dynamometer shows, in fact, that the power in the right is greater than in the left hand. It is about equal to what one would expect it to be in a normal state. It is, however, different in the right hand from a normal grasp. It is a short, sudden exertion which is not maintained, differing in this respect also from the well maintained grasp of the left hand.

Sensory Disturbance:—The only symptoms of a sensory character were entirely subjective, with the exception to be mentioned, and confined to the right hand and the right half of the tongue, and the lower part of the right face.

Now and then he would say that he felt some numbness in the left fore-arm and hand.

The only ascertainable objective disturbance of sensation, was in the right half of the tongue, where there was a very obvious difference between the right and left halves to the sense of touch, while painful and thermic stimuli appeared to be normal.

Tactile sensation, as well as painful and thermic stimuli, were elsewhere normal. He quickly recognizes when his face or tongue is touched simultaneously by either two sharp or dull points. The acuteness of this form of sensation appears to be normal, not only in the right face and tongue, but also in the extremities.

Muscular Sense:—He readily recognized any and every position in which his right extremities were placed. If the left extremities were placed in a certain position, he could without difficulty place the right extremities in the same position when his eyes were closed. He is perfectly able to name common domestic articles by the sense of feeling. He estimates also fairly accurately, the weight and shape of objects when placed in either the right or left hand.

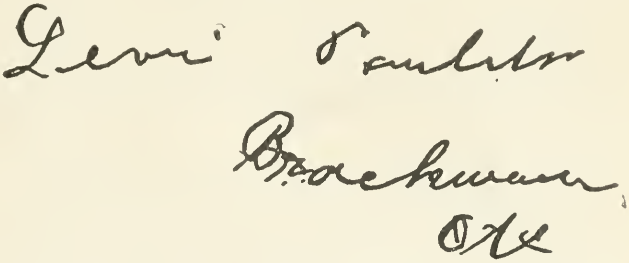
Speech Disturbance:—The chief if not the only disturbance of speech was in articulation. There was from the time of his entrance into hospital, a gradual progressive deterioration of the power of articulation from slight dysarthria up to a practically complete anarthria. The labials, b, p, m, were from the first pronounced with difficulty. Finally, he was unable to articulate any one letter of the alphabet that could be understood, with the exception perhaps of the letter o. The simplest words were so imperfectly articulated that it was impossible to understand him. He, however, in spite of his failure to convey his meaning, made persistent efforts at speaking. He evidently understood the words he wished to express, and appeared to have no difficulty whatever in calling them up in his memory. He knew, for instance, the number of letter or syllables in a word. There was the same difficulty in naming the numerals as in pronouncing letters or words.

Now and then it was noticeable that he had a difficulty in recalling certain names, but this was at no time a pronounced symptom. For several consecutive minutes, he would make persevering attempts to speak, seemingly always calling up the proper word without difficulty, but he was not understood because of the defect of articulation.

At no time was there any evidence, of word deafness, or of word or object blindness. He was able to read, as he spent the great part of his time in doing so, when the headache lessened.

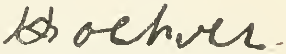
Defect in writing:—He was able to write words of one syllable without making any mistakes, but even a very simple word required an effort on his part. Words of two or more syllables were very rarely written correctly. He made a fair success with the first syllable, but stumbled over the second. When asked to write his own name and place of residence, he was unable to do so correctly, except the first syllables. The following is the results of one of the most successful of his efforts:—

To write—Levi Poulin, Brockville, Ont.


Levi

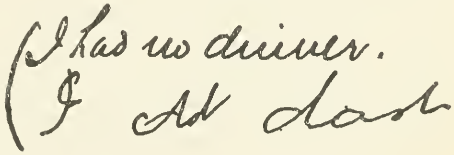
His success in copying printed or written words was no better than his attempts at spontaneous writing, as the following example will show. When asked to copy the word Hospital in large print the result was:—

HOSPITAL.



When asked to copy the following words:—

"I had no dinner," he wrote:


I had no dinner.

The defect in writing was more a dysgraphia than an agraphia.

Electrical Reactions:—The reaction of the paralysed muscles, supplied by the right facial nerve was normal to Faradism.

Vision:—The vision was slowly lessening, this corresponding to an increase of the optic neuritis which was now especially marked on the left side. (Dr. Buller's report.)

Headache:—During the last month previous to operation the headache was more or less continuous and severe, being especially so during the night. It was chiefly vertical and often extended down the left side of the head to the left shoulder and down the left arm.

Laryngeal Muscles:—Repeated examinations of the larynx were made by Dr. Birkett, during the patient's stay in the hospital. At no time was he able to detect any deviation from the normal.

Both the abductors and the adductors were found to be capable of normal action. An examination was also conducted by Dr. Birkett, just after the patient was put under ether, and before the operation was proceeded with, with similar results.

The diagnosis of an Intracranial Tumor was made on the following grounds:—

(1) The constant severe headache having no other discernable cause.

(2) The bilateral optic neuritis.

(3) The vertigo.

(4) The exaggerated knee jerks and ankle clonus.

It was localized on the left side of the brain at the lower part of the ascending frontal convolution, because the dominant symptoms were:—

(1) Spasms of the muscles of the lower part of the right side of the face.

(2) The presence of an abiding weakness of the muscles of the lower part of the right side of the face.

(3) A paresis of the muscles of the right side of the tongue.

(4) The presence at times of a slight paresis of the right arm and hand, together with disturbed subjective sensation in the same parts, showing that the centres for these, although not seriously interfered with, were, however, in the immediate neighbourhood of an irritating lesion.

Further, it was considered to be subcortical, on account of—

(1) The practical absence of a general aphasia.

(2) The presence of a dysarthria going on by slow degrees to an almost complete anarthria.

That it was, however, not far from the cortex was shown by—

(1) The spasms of the muscles of the lower part of the right side of the face. To induce these spasms it was rational to suppose the presence of a lesion in the immediate neighbourhood of the cortical centres for the muscles of the lower facial muscles.

(2) A unilateral lesion to induce a dysarthria must be sufficiently near the cortex to include not only the speech tracts, which pass down the same side, but also those that cross over in the corpus callosum and pass down the opposite side of the brain.

The Nature of the Growth:—The nature of the growth could not from the symptoms or course be determined.

A glioma was suspected because of the age of the patient and the failure of active anti-syphilitic treatment over a period of six weeks, to influence in any way favourably the disease.

A tuberculous tumor was not likely, because of the age of the patient, his general good nutrition and the absence of tuberculosis elsewhere, and further, there was no family history pointing to tuberculosis.

Operation performed by Dr. James Bell, Professor of Clinical Surgery, McGill University, on March 9th, 1901.

On account of its greater safety, ether was used instead of chloroform for inducing anaesthesia. The situation of the fissure of Rolando being mapped on the shaven scalp, an ovoid flap, two inches in its transverse and two and a half inches in its vertical measurement, having the fissure of Rolando slightly posterior to a line drawn down obliquely through its centre, was raised upwards.

The dura mater was incised about a quarter of an inch from the edge of the bone incision and everted upwards. The brain was pulsating, and the pia mater slightly cloudy. The cortex appeared to be normal, but on palpation a hard resistant mass was felt in the brain substance, at the lower and more anterior part of the opening. The brain substance over this mass was incised to the depth of a quarter of an inch, the finger introduced, and a hard irregular tumor was enucleated and removed.

This tumor mass was about an inch in its longest diameter and from one-half to three-quarters of an inch in its shortest diameter. It was encapsuled and was of firm consistency and of a whitish colour.

On removing the tumor, about two ounces of turbid, watery fluid escaped from beneath it, leaving a cavity just over the first part of the horizontal arm of the Sylvian fissure.

There was considerable bleeding from the vessels of the pia mater, which was ultimately stopped by ligature.

A glass tube was inserted into the cavity and brought out through a small trephine opening at the line of incision through the bone. The dura mater was closed by sutures of catgut and the osteoplastic flap placed and held in position by sutures through the skin.

He rallied well after the operation.

Chief noteworthy events after the operation.

Speech:—His articulation for several days after the operation was, if possible, worse than before. It was very instructive to notice how the march of improvement, when it began about 8th or 9th day after the operation, progressed.

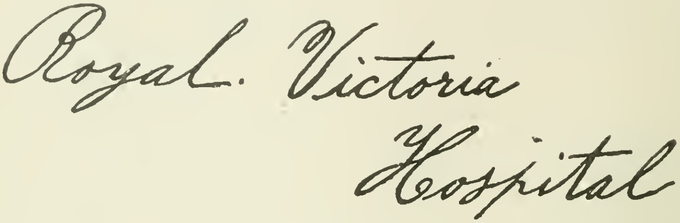
He was first able with a fair degree of distinctness to pronounce simple words of one syllable, but it was not till about the third week that he was able to articulate words of two or more syllables. When he left the hospital, 28 days after the operation, his articulation was nearly normal. He, however, spoke slowly, and words of more than one syllable required a distinct effort. The labials especially called for a deliberate effort.

There was no difficulty manifest after the operation in calling up the names of objects or persons.

He understood readily and perfectly all spoken and written commands, and was able at once to recognize all objects and to name them correctly.

Writing:—About the same time that the speech showed signs of improving, his writing also distinctly improved, and by the time he left the hospital he could readily write correctly words of several syllables. The improvement in writing was first noticed in words of one syllable, and a few days afterwards in words of two or more syllables.

The following is from a letter written by him two weeks after his return home, and six weeks after the operation.



Royal. Victoria
Hospital

The contrast between this and the efforts he made before the operation to write his own name and place of residence, is very great and most interesting.

Spasms:—During the two or three days subsequent to the operation, the spasms of the muscles of the lower part of the right side of the face were more frequent than formerly, but after this date they gradually subsided, and after the tenth day they ceased and have not since returned.

The Facio-Lingual Paralysis:—The day following the operation, the facial paralysis as well as that of the right half of the tongue were more marked than previously. Twelve days afterwards, the tongue was protruded in a straight line, and the facial paralysis was not evident when the muscles were at rest. When he left the hospital on the 28th day after the operation, there was no trace of either facial or lingual paralysis.

Sensory Disturbance:—The sensory disturbances, like those of motion and speech, were more marked for a few days succeeding the operation, but they afterwards entirely disappeared.

The headache gradually lessened and about the end of the first week was no longer felt.

Dr. Buller, on the 27th day after the operation, examined the eyes, but was not able to satisfy himself that there was an appreciable diminution in the optic neuritis. The patient, however, was satisfied that his vision was more acute than formerly.

There was no constitutional disturbance following the operation, the wound by the time he had left the hospital being practically healed.

He was lively and very talkative (natural state), being quite different from his irritable and despondent condition of the days before he was operated on.

REPORT ON THE NATURE OF THE GROWTH.

BY

DR. ARCHIBALD.

Tumor as removed, consisted of three large fragments and several small ones. The largest of these measured roughly about 3 x 3 x 1 1-2 cm., the second about half this size, and the third still smaller. The periphery of the tumor was of a very dark greyish colour, not much unlike cerebral cortex. It merged gradually into a whitish substance, very friable and shreddy, which formed the interior of the growth, and which proved to be degenerated, half-necrotic substance. The whole was dotted over with numerous small haemorrhages.

Macroscopically there was no distinct capsule, microscopically, however, one was found, consisting of a narrow rim of condensed fibrillary tissue, containing practically no cells.

Microscopical Examination:—This is not yet complete. It is, however, sufficient to justify the diagnosis of Glioma.

The outer, better-preserved area, shows a new growth, encapsuled as above mentioned, and consisting of cells fairly uniform in size, about twice that of an ordinary lymphocyte, but varying considerably in shape, some being round, others oval, pear-shaped, or even stellate. These cells lie in a very loose and fine stroma of fibrils, most of which do not apparently take Mallory's specific stain for differentiated glia fibres (modified fibrin method).

A few such, however, are found here and there, but whether they do not, in this situation, represent fibrin, must remain as yet undecided.

As one goes inwards towards the older degenerated portion of the growth, these differentiated fibres, taking Mallory's stain, become more numerous, and finally form a solid mass, in which comparatively few cells can be found. And these cells are, on the whole, smaller than the cells of the peripheral well-preserved area, and more uniformly round. They are, however, largely degenerated, and take any stain very poorly.

The degeneration shows as a mass of granular detritus, and is probably albuminous in nature (as is said by Bonome—(Virchow's Archiv., 22nd March, d. j.) to be frequently the case in gliomata).

There is no trace of nerve tissue in the tumor. This was confirmed by Dr. Shirres, who kindly examined sections with regard to this point.

New-formed vessels are found in abundance, together with frequent small local hæmorrhages.

Around some of the old vessels there appears to have occurred a fibrous tissue proliferation, the spindle cells of which arrange themselves in a radiating way around the circumference. This is, however, infrequent; and the hypothesis of a sarcoma beginning in vessel adventitia may, so far as present sections allow one to judge, be excluded.

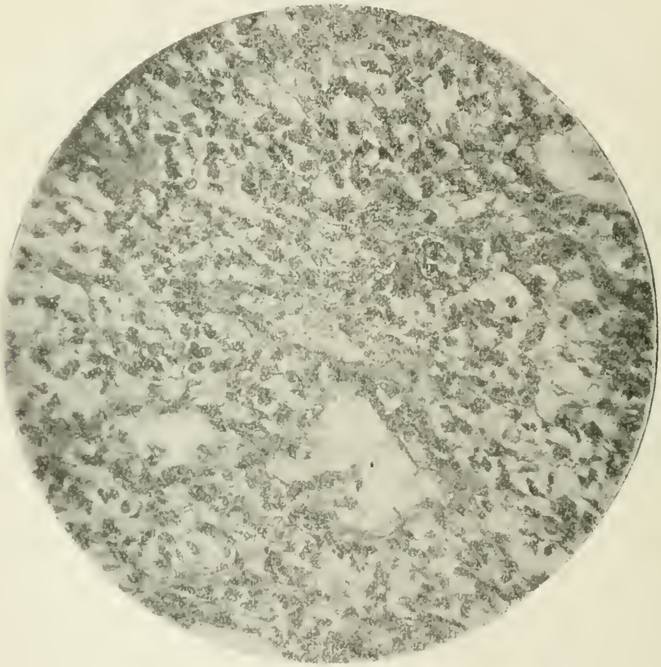


Fig. I.—Represents a portion of the periphery of the tumor, stained by hæmatoxylin-eosin embedded in paraffin.

To resume. We have had a tumor of widely differing histological characters. In the centre, a mass of differentiated glia fibres with very few cells; at the periphery a richly cellular growth, not unlike sarcoma at first sight, but merging by transition stages into the structure of the centre. There seems, then, to be some ground for the conclusion that the whole is of the gliomatous nature; and that in a glioma there may be one portion, presumably of youngest, most recent growth, the cells of which have not yet the property of producing differentiated neuroglia fibres, while another portion consisting of older, or oldest, cells may, having acquired this property, show large numbers of such differentiated fibres, even to the almost total exclusion of cells. A consideration of this question will, it is hoped, throw some light on the vexed question of the so-called glio-sarcomata.

There has not been sufficient time for the thorough working out of this growth, nor for a complete examination of the literature; and the above must be regarded as a preliminary note. It is hoped, however, in a later article, to present a more detailed description, and a more extended consideration of the subject as a whole.

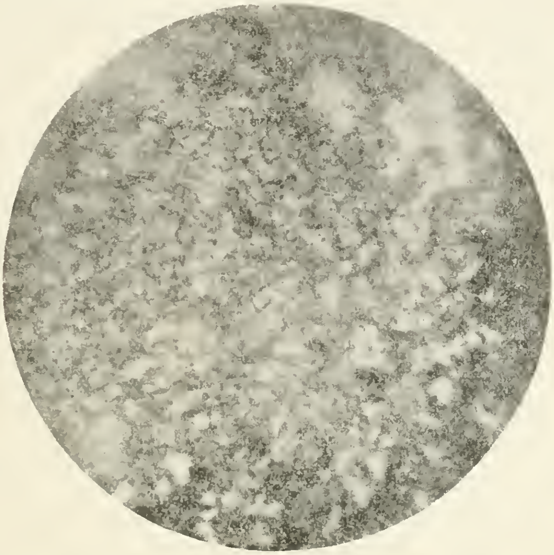


FIG. II. Represents a spot from the necrotic shreddy material of the centre, showing practically nothing but a tangle of neuroglia fibres, stained deep violet by Mallory's neuroglia stain. His phosphotungstic acid hæmatoxylin has not so far given satisfactory results.

Two microphotographs are appended.

Fig. 1 represents a portion of the periphery of the tumor, stained by haematoxylin-eosin, embedded in paraffin.

Fig. 2 represents a spot from the necrotic shreddy material of the centre, showing practically nothing but a tangle of neuroglia fibres, stained deep violet by Mallory's neuroglia stain. His phosphotungstic acid hæmatoxylin has not so far given satisfactory results.

SUMMARY.

The following summary of the course of the symptoms in this case will make it more clear and definite.

A man, aged 37, without previous warnings, suddenly became speechless for about twenty minutes. There was a recurrence of attacks of a similar character every few days for a period of several weeks. Then severe headache and optic neuritis supervened, and afterwards facial spasm followed by paresis of the lower facial muscles on the right side, as well as weakness of the right half of the tongue. The mutism no longer was noticed, its place being taken by a dysarthria, first of labials and later of all letters and words, and finally passing on to a practically complete anarthria.

On opening the brain, a tumor was found immediately beneath the grey matter of the lower part of the ascending frontal convolution. The removal of this was easily accomplished, and was followed in the course of a few days by disappearance of the anarthria, and the facio-lingual paralysis. The patient is now, two months after the operation, practically well, there being no evidence, except slowness of speech, of any disturbance of the central nervous system.

The case is interesting:—

(1) As being an instance of a successful removal of a subcortical growth, the location of which had been correctly made out six weeks previous to the operation.

(2) As showing that dysarthria and not aphasia, is the characteristic form of speech disturbance met with in some growths in this situation. The growth was situated so as to compress the speech tract some distance from the motor speech centre, but still sufficiently near to involve the commisural fibres that pass over to the right hemisphere in the corpus callosum. Following the lead of Lichtheim and Dejerine, it has been the custom with even the most recent writers to call the speech disturbance attending lesions in this situation subcortical motor aphasia.

Bastian in his recent able work on Aphasia, clearly shows that these subcortical lesions do not give rise to aphasia, but to dysarthria or anarthria. This case bears out his views, as well as those of Elder.

It would certainly be erroneous to call the speech disturbance aphasia. An aphasic patient is able to utter some word, and when he does do so, the articulation is perfect, whereas in anarthria, when more or less complete, even the simplest words and individual letters are scarcely recognizable.

To distinguish between the anarthria of subcortical lesions and that produced by lesions of the bulbar nuclei, Bastian uses the term Aphemia (speechlessness) for the former, and anarthria for the latter. It must, however, be understood that there is no clinical difference between the speech disturbance of subcortical lesions, and that brought about by bulbar lesions. They are recognized by the collateral symptoms.

In nearly all cases reported of so-called subcortical motor aphasia, it is claimed that defects in writing did not occur.

Here there was a marked disorder in writing—an ataxia of writing, or what might fairly be named a dysgraphia. This was present without any weakness of the right hand, and was therefore not due to loss of power, but rather to disturbance of co-ordination. Considering the near situation of the lesion to the centres for the hand, it is not surprising to find and not difficult to account for, the disability in writing.

THE ART OF HEALING AND THE SCIENCE OF MEDICINE.*

BY

J. G. ADAMI, M D.,

We are to-day gathered together to celebrate the laying of the corner stone of the new laboratories of the Medical School of the University of Michigan, and it is fitting that on such an occasion we should ask ourselves what is the good which we hope will be accomplished by those laboratories? Every medical school that is progressive finds it essential to advertise the possession of laboratories, and it may be the details of the apparatus contained therein—the "scopes" and "graphs" and "ometers," and so on.

Your University has been well to the fore in this matter of laboratory training. Since 1856, or now close upon 50 years, there has been a chemical laboratory, for 25 years histological and physiological laboratories have been established, your laboratory of medical chemistry was the first of its kind in America as was that for electro-therapeutics, as was again your laboratory of clinical medicine. You possess also, what few other universities possess, namely, a surgical laboratory in which, as part of his course, each student is taught to perform operations and to practice the methods of antisepsis and asepsis. Some of these laboratories, as for example, those in clinical medicine, surgery and hygiene, may be spoken of as directly medical, but the majority are for training in what are preparatory subjects.

Why is it that we lay so much stress upon practical training in subjects which are not directly medical? At least ninety per cent. of our students will never aspire to be anatomists or to make histological preparations, once they graduate: neither will they compound their own drugs, or test, by means of instruments of precision, the effects of those drugs upon the heart, muscles or secretions of their patients; we do not expect them to instal incubators and grow bacteria upon their own premises, and, while we hope that they will employ their microscopes for the routine examination of dejecta, we gravely fear that with the majority the microscope under its glass case will be but one of the insignia of the doctor's office—will be to that office what the glorified bottles of colored water are to the druggist's window. It is these laboratories with their necessarily large staffs of demonstrators and assistants which make the medical course so increasingly expensive, so expensive that we cannot expect the student to pay the full cost of his education, even when a large proportion of the professoriate give their services for nothing or next to nothing—so expensive that we look to the State or to private munificence for aid in building the laboratories or endowing special professorial chairs.

---

* An address delivered on the occasion of the laying of the corner stone of the New Medical Building of the University of Michigan, Ann Arbor.

Were it not better done to spend less time and money upon all this scientific work, and more time in the hospital wards and clinics? The four years course is all too short even for a thorough hospital training. Once graduated it will be at the bedside and in direct attendance upon the sick that the physician will find his occupation. Why all this instruction in science and not a thorough, and shall I say, old-fashioned, practical training in the study of the treatment of the sick?

It is worth while pausing to answer these questions and this, not only because incidentally our answers must bear upon and elucidate what is true education, but also because I know—and you know—that these very questions are being asked by not a few able and practical members of our profession. There is, I find, an increasing outcry on the part of many clinicians that the modern student is being overburdened with science, that, asked concerning any given disease, he can discuss volubly its causation and the meaning of symptoms and can test chemically and microscopically the discharges which may be sent to him, but when that same young graduate, or about-to-be-graduate, comes opposite to the living and suffering patient, he shows himself, not to mince language, an incompetent fool.

Now I am, as some of you may know, no clinician; I am purely a laboratory teacher; but as such I recognize that we should strive to answer squarely such questions and such objections. I feel assured that they can be answered favorably, so far as regards the modern laboratory training, and this being so, it is but right that I should testify on behalf of the faith that is in us.

It will be seen that these questions resolve themselves into this—Are we acting wisely in insisting upon a thoroughly good grounding in the ancillary sciences, or would we do better to insist less upon laboratory more than clinical training? Thus, to-day, I would especially take up this matter of the methods of medical education, with especial reference to the part which laboratory work should take in the same.

What is our object in medical education? That object is, to develop, or attempt to develop the ideal practitioner. It is not merely to develop a learned man, but to develop one who shall so bear himself in all his relations that he will be a credit to himself, his alma mater, his profession and his country; who shall be, in the first place, of the greatest possible service to those of suffering humanity to whom he ministers, and not only that, but shall be an influence for good in improving the conditions of life in the community in which he practices: who shall so minister that he aids and strengthens his fellow-workers and raises the standard of our profession as a profession; who shall add credit and lustre to the school which has produced him, and lastly, who in all his relationships shall so bear himself that at the end of the day's work—as at the end of his life's work—he shall feel within himself that he has done his duty loyally and has earned his rest.

It is difficult to picture forth the ideal practitioner, nor shall I attempt it. Each of us, I doubt not, has his own idea of that ideal. In the words of Pythagoras, "There are two things which must ennoble Man, and make him to resemble the Gods—to know the Truth and to do Good." The ideal practitioner of all men, it seems to me, most constantly attempts to exemplify this saying and to live the noble life. High character, good manner and marked capacity play important parts in our ideal of what he should be.

Now character, manner and capacity, each and all, are in part inherited, in part capable of acquirement. It is not given to everyone to be, or to become, a capable and adequate physician; he only can become such who is born to the work. In a recently published life of Sir Benjamin Brodie, you will see this called in question. Brodie is quoted with approval as stating that he had no interest in medicine as such when he began his career as a student; he pooh-poohed the idea as to their being any special call to our profession; all that was necessary for success was a strong sense of duty. Possibly Brodie is right, but I doubt it. Apart from the fact that while I freely admit that he was a most popular and most fashionable surgeon, he never seems to me to have been quite the highest type,—something was wanting in him,—my personal knowledge of those men whom I have learnt to reverence as teachers or as colleagues, and of those who were fellow-students with me, has abundantly convinced me that it is those that have been keenly interested in medicine from the start, who have loved their work for that work's sake, who now have made or are making their mark; while those who have entered our profession purely to please their families have accomplished relatively little. If there be not a special call in the medical career, at least there must be a keen interest in our subject from the very beginning, for without this it is impossible to undergo the drudgery of the earlier years of training.

Something in the manner of the man, in his character and in his capacity there must be from the start, and upon this we have to build. And now as to the manner of that building. How, in the first place, can we best develop character and manner? It has to be admitted that our influence in the medical school can only be indirect; we cannot give special courses in these subjects. On the other hand the university life is in itself the best training—the intimate contact at the most susceptible age with those fellow-students leading high lives and having high ideals and the keen but generous rivalries lead insensibly to elevation of character and the development of good manners, which after all are but the so conducting oneself as to treat others as you would they should treat you.

There is, however, a branch of good manners, if I may so term it, especially pertaining to the medical man which is summed up in the expression, "a good bedside manner." It is possible, nay, I think probable, that we could do more towards the development of this: certainly those of the old school possessed it to a far greater extent than do we of modern days. In the old days of apprenticeship—by the diligent, if unconscious study of the methods of one good man, by observing how he encountered his patients, how he led them on to feel at ease and trust him and to unfold their tale, how he detected the petty foibles of the patient and made use of the same in determining the treatment to pursue—the student undoubtedly learnt much that was of very great use in successful treatment. Now-a-days the student has not this opportunity. He learns from many men and not from one, he has time to note the idiosyncrasies of his clinical teachers but little time to recognize and learn to imitate their greater gifts and, among these, their art of influencing the patient. There is indeed so great a rush, so much to be accomplished in one short hour, that the clinical teacher cannot bring to bear the fine art of personal influence to its full extent; that requires time and leisure, and these are wanting. Again, now-a-days we are losing the art of good prescription. We leave that to the wholesale druggist and few, I fancy, trouble themselves now-a-days with regard to incompatibles, and to the subtle hiding of the taste of nauseating drugs by suitable essences. Still less do they trouble about so prescribing that the medicine becomes actually attractive.

It may be that to-day we do not sufficiently recognize that there is an art of healing, certainly our course is not calculated to impress upon our students the importance of this art. A portion of it, it is true, which is mechanical, we do regard; we teach our students, for example, how to operate; but even here the modern tendency is not so much to lay stress upon the performance of operations as an art—the performance of artistic operations—as upon precautions to be taken lest harmful processes occur in the wound after the operation has been performed. The art of operating, in fact, reached its highest point before the introduction of anæsthetics and antiseptics, before the beginning of the scientific period, when students and practitioners stood round the operator, watch in hand, and timed the number of seconds taken to accomplish a major operation, and marvelled at the sureness of the cut.

We could do more to elevate this art of healing, namely, in training our students how to approach the patient, and how, giving him confidence, to gain that patient's trust in the man and in his methods which is so important a factor in the cure of many conditions. As Dr. Osler wrote in a late review upon medicine in the last century, "Faith is the great lever of life, without it man can do nothing . . . . Faith in us, faith in our drugs and methods is the great stock in trade of the profession . . . . it is the *aurum potabile,* the touchstone of success in medicine. As Galen says, 'Confidence and hope will do more good than physics—he cures most in whom most are confident.' . . . . Faith in the gods or in the saints cures one, faith in little pills another, hypnotic suggestion a third, and faith in a plain common doctor a fourth."

It is by our manner and bearing very largely that we become capable of instilling this faith. There is no need for us to shut our eyes to the fact that many of what the laity regard as our most marvellous successes are not ours; when others would praise us our cry should often be "Non nobis Dominie, non nobis," the good results, so far as they are due to us, being, not the result of our knowledge, but of our power, in part inborn, in part acquired, of impelling trust and confidence. To a larger extent they are due to the state of mind of the patient, to his state of preparedness to be influenced, and our drugs, it must be remembered, have more than a pure pharmacological action. "The time-honoured potion carries with it the undying power of the medicine-gods and the medicine-man, of Fairyland and of the witches, as real as ever . . . . The calamity came from the unknown and they will have help from the unknown."

But, after all, the mere knowledge of the art of healing does not make the physician—certainly it does not make the ideal physician, and as to faith—well, there is an old-time controversy concerning the value of faith without works. Given Art of healing and Faith in the healer I would ask you to compare the status of our profession in the 18th and earlier centuries with its status now at the beginning of the 20th. One need but study 17th and 18th century literature to discover that in those days the typical physician was not delineated in a manner that is pleasing. In that literature he is depicted as pompous, formal and insincere, accustomed to hide his ignorance of the nature of disease in a cloud of high-sounding words; accustomed to veil his ignorance of the cure of disease by inflicting upon the patient medicines compounded from an appalling number of drugs on the off-chance that one or other of the many might prove efficacious. Rarely is he depicted as a disinterested seeker of the truth, the friend and counsellor of the family, the man ready to sacrifice time and himself in order to aid in effecting cure. And yet all this time the art of healing was especially studied, and manner was regarded as the essential for success. If our status and the popular estimation of our profession have risen during the last century it is not because we have improved in these matters. On the contrary, as I have pointed out, we have as a body deteriorated. It is because we have developed the science of medicine, because, now-a-days, we are not or would not be empirics; it is because all through this last century we have striven, to an extent never before known, to comprehend disease, to seek out its cause, to understand the meaning of symptoms, to develop a system of rational therapeutics, so that now over and above profound acquaintance with the art of healing what leads to the production of the ideal physician is a knowledge of the science of medicine.

---

* There are few more delightful essays than those of Moxon, of Guy's, and I would advise all who have not done so to read and enjoy his 'Pilocereus Senilis.' But I warn you they are delightful to the extent that they are masterpieces of genial cynicism, exquisite language, wilful contrariety and brilliantly inaccurate reasoning.

Do not, in the first place, be misled by those who, like Moxon, deny the existence of a science of medicine. Of course there is a science of medicine just as there are other biological sciences. One might as well say that there is no science of astronomy, because if one analyses the work of the astronomer it is but the combination of physical and mathematical observations. And this science of medicine consists in the close observation of the facts of disease and of its cure, in the correlation of those facts and the systematizing of the same, with the deductions to be drawn from such correlation. Over and above everything therefore we in our system of medical education have to evolve the man of scientific training and possessing the habits of scientific thought.

Now the education which shall evolve the man of science is altogether different from that fitted to develop the literary man, or so-called man of culture. As Huxley remarks in one of his Lay Sermons: "In the world of letters learning and knowledge are one, and books are the source of both, whereas in science, as in life, learning and knowledge are distinct and the study of things, and not of books, is the source of the latter. All that literature has to bestow may be obtained by reading and by practical exercise in writing and in speaking; but I do not exaggerate when I say that none of the best gifts of science are to be won by this means. On the contrary the great benefit which a scientific education bestows, whether as training or as knowledge, is dependent upon the extent to which the mind of the student is brought into immediate contact with facts, upon the degree to which he learns the habit of appealing directly to Nature and of acquiring through his senses concrete images of those properties of things which are and always will be but approximately expressed in human language."

But to this extent this scientific man is like the literary, that he requires to use the same instruments for thought and the expression of thought; both require to be so trained that they can know how to use with facility the tools of intellect and of thought;—reading. writing and ciphering. And here let me say that a painful experience of examination papers convinces me that the majority of would-be medical students on this continent, both American and Canadian, have not been trained in the use of their tools, I am rejoiced to learn since I have been here in Ann Arbor that this statement does not apply to the majority of the medical students of the University of Michigan, and that the general school training of this State is, judging from its results, excellent. But speaking for medical schools in general it has to be confessed that a miserable proportion of our men come to us able to express themselves lucidly, to place upon paper a well-connected train of ideas. The majority are but capable of jotting down correctly bald facts in indifferent order, while many cannot even jot down these facts grammatically. I hear much the same complaint about the ordinary run of English medical students.

There is something woefully wrong in our common scheme of preliminary education, and I am inclined to think that the official scheme of education is wrong in this, that it is a system of cramming in instead of one of "drawing out," a system of supply of facts instead of being one of training in the application and the utilization of facts. In place of a thorough training in the aforesaid tools our youth is fed abundantly on a multiplicity of subjects and then, if I may venture to quote a very well known English physiologist, is "expected to pass a copious examination." The examination system almost of necessity calls for the exhibition of facts instead of the application of the same. While further, our present system, perhaps rightly (though I think to too great an extent), instils into the mind of the learner a reverence for authority—such and such a textbook is to be used, such and such a statement or statements are contained in that textbook and have to be known, such and such statements therefore are to be regarded as essential and correct. Thus it is that the student enters upon his career at a medical college with a profound belief in authority and a disposition to accept what he finds stated in textbooks as authentic and as, if I may so express it, "necessary to salvation." He is prepared to have his thinking done for him by writers of textbooks and by his lecturers; he is wholly unprepared to think for himself, or if he does think for himself his thought and his theory is based, not upon what he has himself observed, not upon facts which are known by him to be facts, but upon what he assumes to be facts. To such an extent is this the case that, tell the commonplace young student that there is a murmur to be heard over an aortic cartilage and he will hear that murmur although it is non-existent, tell him that there is no murmur present and he will mistake a good hard blowing murmur for the ordinary heart sound.

"Though Man a thinking being is designed,
Few use the great prerogative of Mind;
How few think justly of the thinking few,
How many never think who think they do."

Do not mistake me and imagine that I mean to indicate that the medical student at the start is less thoughtful than the ordinary man; I do not mean any such thing. But I do mean that in our course of medical education we in general have to begin to teach our men to think, to make them think for themselves, to make them observe facts and prepare them to reason sensibly and logically upon these facts. Only by doing this can we hope to develop men of resource, men capable of treating each case that comes before them in a sound and scientific manner. It is not possible for men to succeed by committing to memory descriptions of disease, remembering such descriptions and recognizing that a given case which presents itself to their notice tallies entirely with the description in the textbook and consequently is to be treated according to the methods laid down by authority. It is futile also for men to imagine that by walking the hospitals they will in the course of two or three years gain so full a series of mental pictures of disease that in practice all that is necessary is to remember these pictures in order to make accurate diagnoses and, remembering likewise the exact treatment given in the hospital to similarly treat their cases with success. I do not say that such memories never avail; of course they do; they are time and again serviceable. But this may surely be laid down, that each case carefully studied is found to present divergences from the type; each case is different from every other one, and so can only be conscientiously treated by the appreciation of those differences and suitable modification in treatment, that is by the application of thought. As in physiological experiments every slight modification of the factors involved modifies the result, so in the attempt or experiment to heal or alleviate disease. To obtain the right result the factors involved must be understood and the variation in the factors involved must be taken into account. And to appreciate the working of the different factors the student has to know the main laws of physical and chemical science, because at bottom all the phenomena of life, whether healthy or diseased, are chemical or physical. He has to be acquainted with Biology and the main laws governing living and sentient as distinct from non-living matter; he must have a broad grasp of Physiology and of the functions of the normal and healthy organism; he must be acquainted with the structure of the body and with the finer structure of the more important organs so that he may obtain a clear mental view of what happens in those organs and of the effects of disturbed activity; or otherwise, he must comprehend Anatomy and Histology. Further, he must have a knowledge of the main causes of disturbances of function of the body, of the causes of disease; of the main processes of disease, so that recognzing the existence of these processes he may know their meaning; and of the main results of disease, so that he may understand how to cope with or alleviate these results. Using drugs and other methods of cure he must know how these influence the organism so that he may be enabled to use them with due effect; or otherwise, he must have full instruction in Pathology and Pharmacology.

Lastly, the doctor's function in society is not merely that of curing disease but embraces also the higher and self-denying duty of employing all means in his power to improve the health of the community in which he finds himself. He must be familiar with the main facts of Preventive Medicine and Sanitary Science.

No man can think honestly or deal honestly with facts however much he so desires to do, until he reaches this stage, the stage of being prepared to accept authority only so far as himself testing, or having at some previous period tested that authority he finds it to be correct. And so it is that to gain properly a knowledge of all these matters and to use that knowledge when gained, the direct study of natural phenomena becomes essential. Herein lies the value and here the need of laboratory work for the medical student.

And thus it is that for the instruction of our students we must have good laboratories in order that they may not merely have a book knowledge of the laws and of the basal facts of life (which are the laws and the basal facts of operation in and determining the course of disease), that they may test those laws and see their operation, that they may have a personal intimate knowledge of their own that these things are and have their definite effects, that they may observe the correlation of facts and having personally tested this correlation may reach the stage in which they may from known facts learn to argue aright and gain the habit of independent and well sustained thought. And it is when the student has reached this stage that he is in a position to gain full benefit from his work in the wards, that he becomes capable of studying rightly the individual cases which come before him. Do not let it be thought that I am here for a moment attempting in any way to depreciate the value of clinical work in the education of our students. On the contrary, that is the supreme portion of the medical training for which all the rest is preparatory. Rather, for myself, I wish to see that training more thorough, to see the student permitted to a greater extent than he is in most medical schools to undertake full study at the bedside, and for this reason I am against what is now spoken of as the Harvard method, that of giving to the student histories of cases and from the symptoms noted in those histories asking him to work out the nature of the disease and course of treatment to pursue. For, if such a system, admittedly attractive and of some value, becomes at all general, the infinitely more valuable training to be obtained from the study of the patient himself, is liable to be replaced or not striven after. The student needs every particle of clinical training that we can give him, but this training should come more towards the end of his course, or rather should come when he has already had a sound training in scientific methods, and as I say, above all in the habits of scientific thought.

* * * * * * * *

There is, lastly, another aspect of the laboratory which must assuredly be taken into consideration, I mean the laboratory as a centre for medical research. Locally, having regard for our own institutions, and here I speak not merely for the teaching staff of such institutions but in reference to the governing bodies directing these institutions, the needs of our students of necessity occupy a first place in our thoughts and call for our first consideration. That which is always before us, is how best to minister to them and to make our teaching a success. Almost inevitably therefore we are apt to overlook to some extent, the importance of research in a university.

And yet for the abiding reputation of the university, in order that its fame be not merely a local matter but be spread far and wide, and that the influence may be felt in countries far remote and even among people speaking other languages, the ordinary teaching is of relatively slight importance, research in its laboratories and in the clinics attached to the University is of prime importance. And here, to become personal,, let me tell you that years ago in the early eighties, when I was a young graduate in Cambridge, England, when I never thought that one day I should be established upon this Continent, and should find myself addressing you, I knew and I respected Ann Arbor. I knew nothing as to the large size of your classes, nothing with regard to the quality of your teaching, nay rather, the very name gave me an idea of the university as a small rather idyllic community situated in some little country town; certainly I never imagined that this was a State University giving a free education to all those born within the State and showing themselves capable of benefiting by the wide beneficience and liberal forethought of your State Government. But I knew Ann Arbor from my interest in the researches of one of your professors, now no longer with you; I refer to Professor Sewall. And, if those researches made a name for him, they also made your University to be known favorably as a centre in which good work was being carried on, as a place where there was a high scientific spirit. But a year or two later when I came across the researches of your Dean, Dr. Vaughan, those drove home and strengthened my first impression of Ann Arbor.

And indeed, when we come to study the history of the development of universities, we find that they were established originally, not in order to accord the elements of a general liberal education but for the prolonged study of professional faculties by men of riper age. It was the Church of the middle ages which in its various conventual and other schools gave the elements of a liberal education. Men came to Bologna, the first great university, for special study in law, they went to Salerno for special advanced study in medicine, and only secondarily did the great old universities of Bologna, Paris, Oxford, Cambridge and the rest, becomes centres at which a general liberal education was afforded. That they should have become such was perhaps inevitable, that the teaching of those requiring an ordinary degree should replace what I may term advanced work, was, it may be, a necessary evolution. Even now, in our old English universities we distinguish traces of this earliest order of affairs; the general teaching of students is still very largely left to the colleges, which were and are voluntary associations established within the university and originating primarily very much as the fraternities have originated in our American Universities during this last century, namely, as a result of the desire of students coming from certain districts or having special sympathies, to band themselves together. The university it is true affords examinations to those thus taught in the colleges, but the professors still to a very large extent are supposed to be engaged in advanced work and in helping advanced students. But it has to be acknowledged that the colleges have gained the pre-eminence and in the minds of most constitute the university.

Inevitably as students flocked to a university, the universities became popular. The teaching of ordinary students in the more elementary work for the arts or professional courses came to the fore there and elsewhere, and this to such an extent that the primary function of the university at the beginning of last century, had, save in Germany, been very largely forgotten. The German universities, despite the troublous times, the wars and the poverty of the people, or indeed, it may be largely because of the troublous times clung to the earlier conception of their functions. For the number of universities being great, as the number of students became small in consequence of the diversion of the energies of the youth to the army and to making sufficient to earn a living, the staffs turned to and continued at advanced work. The consequence is that, small and large, the German universities have become famous throughout the world for the advances made in science through the researches of their staffs.

Now-a-days, we in America are coming to recognize fully the advantage to the community at large and to the universities themselves of accomplishing this higher function and of encouraging research. If any university is to take first rank it must afford opportunity for those properly prepared, to undertake research work in properly appointed laboratories, and according to the encouragement given to such research so will be the reputation of the university.

I feel, though, that I need scarcely make those remarks here in your midst, for you in Ann Arbor have taken a foremost place on this Continent in recognizing the value of research and, through the observations of your Staff, it is no false praise to state that you have gained a reputation altogether in excess of the importance of Ann Arbor as a city, altogether in excess of the size of your university, the number of your students and the extent of your equipment, large as these are. As coming from outside, and indeed from another country, let me tell you that there is no State university that has the same reputation as have you, nay, more, that among those interested in medical science you take a stand equal with far older and far wealthier institutions, and this, let me repeat, not because we outside know you and the uniform excellence of your ordinary graduates—we do not come across those ordinary graduates to any extent—but because we know and appreciate the work and the writings of Cushny, Dock, Huber, Nancrede, Novy, Vaughan, McMurrich and Warthin. I here mention just the names that come to my mind and I am careful to mention them in alphabetical order. lest putting them in any other I should offend against the laws of local precedence. In short, we know your staff as a remarkable body of men who are doing as much or more than any similar body to advance the reputation of American Medicine.

And how that reputation has advanced during the last few years! The advance, it is true, has in part been in the domain of pure clinical and surgical work. American surgery, gynæcology, pædiatrics and orthopædics stand well in the forefront of the like specialties in the rest of the world, but the great burst of brilliant reputation has come within little more than a decade—the brilliant observations upon pancreatic disease and its causation beginning with Fitz of Boston and culminating with the remarkable studies of Flexner and Opie; Welch and Flexner's researches upon emphysematous gangrene and its causes; the great studies of the Boston School upon epidemic cerebro-spinal meningitis and diphtheria; Councilman and Lafleur's classical observations upon amœbic dysentery with Flexner's more recent observations upon other forms of tropical dysentery; the Baltimore observations upon malaria and typhoid; Macallum's remarkable and carefully worked out discovery of the existence of a sexual process, in what we may term, malaria in birds, which led up to and made possible the full understanding of the life cycle of the malaria parasite; Gilchrist's discovery of blastomycetic dermatitis; Herter's work upon metabolism, and the most recent and admirable work upon the mode of propagation of yellow fever by Read and his associates—all these are but a few of the great medical works of the last few years, of which the foremost medical community might well be proud. And all these are the result of laboratory and post mortem room research.

We can, I firmly believe, affix a date to the beginning of this veritable medical renaissance; it dates from Newall Martin's appointment as Professor of Physiology at John Hopkins and from his pregnant enthusiasm in physiological experimentation. His work, ably seconded later by Welch and Osler. has had the greatest influence in stirring up the love for medical research throughout this Continent, and already so promising are the results that that seems to have been a safe prophecy to which Osler gave utterance last year in London, that at the rate of the present advance of medical science in America, it will not be long before the medical centre of gravity crosses the Atlantic and is to be found on this Continent.

Let me congratulate you in Ann Arbor that you have recognized these things and that you are worthily preparing yourselves to keep in the forefront of medical education and medical research. May the buildings which are now growing up day by day be the centre for much sound work and observation and discoveries, which shall lead to the relief of suffering humanity and which, doing this, shall carry the name and the reputation of your university to the uttermost ends of the earth.

THREE CASES OF ECLAMPSIA IN WHICH THE CONVULSIONS WERE PROMPTLY ARRESTED BY A HYPODERMIC INJECTION OF VERATRUM VIRIDE.

BY

A. Lapthorn Smith, B.A., M.D.,

Professor of Clinical Gynæcology in Bishop's University, Montreal, and Professor of Surgical Diseases of Women in the University of Vermont, Burlington; Surgeon in Chief of the Samaritan Hospital for Women, and Gynæcologist to the Montreal Dispensary.

Case I.—Mrs. P., 22 years of age, consulted me at my office on the 22nd July, 1901, stating that she had nearly died from puerperal convulsions a year before, and as she was now three and a-half months pregnant with her second child, she wished me to take her case in hand so as to save her, if possible, from having them again. On further inquiry I learned that about the end of the eighth month of her first pregnancy she had been having severe headaches and loss of vision for some days, when she suddenly took convulsions. A neighbouring doctor gave her chloroform as long as he could, and then he called a confrere to relieve him, and between the two of them she was kept under chloroform from 6 a.m. one day to 2 a.m. the next, when they called in a specialist, who lost no time in performing artificial delivery, soon after which the convulsions entirely ceased. A friend who was present most of that day has since told me she had between fifty and sixty convulsions, notwithstanding the chloroform.

On examining the urine I found it absolutely free from albumin, but very acid, and her bowels were rather constipated, so I gave her an alkaline mixture with a laxative. She then felt very much better, and I did not see her again until the 22nd Sept., when she complained of feeling very badly, and on examining the urine I found it loaded with albumin. She started the alkaline mixture again, and I did not see her till the 28th Oct., when I was called to her house at night, and found her almost blind, with a terrible headache and vomiting persistently. I at once administered a half-grain hypodermic of morphine, and gave her an enema of one pint of salt solution, which was to be repeated every two hours during the night in order to wash out some of the poison from her blood, as well as to satisfy her thirst due to the vomiting, which had been going on all day. I was called again at 2 a.m., but before I could get there she had had five convulsions. Another hypodermic was given, and as soon as I could procure some tincture of veratrum viride I returned and gave her a hypodermic of twenty-five minims, the whole syringe full. She had had two more convulsions while I was away getting the veratrum, and she had the eighth about eight minutes afterwards, but she had no more after that one. During this eighth convulsion I took her pulse and it was so full and strong that I easily counted one hundred and eighty, but inside of a quarter of an hour it had come down to one hundred, and when I returned at eleven o'clock the same forenoon, it was only fifty-six and quite soft. The vomiting was stopped and she could see me distinctly, but the headache persisted. Her friend had faithfully continued the normal salt enemas, so that she received and retained over a gallon in sixteen hours. The third day when I made my visit she appeared to be as well as ever. I took some of her water and found only half as much albumin, but I did not require to see her again until the 8th November, when she called at my office. I drew some water with the catheter and found less than a quarter as much albumin. On the 13th November she had two or three labour pains and was delivered of a dead and macerated fœtus without the slightest bad symptoms since, now two weeks ago. When seen on the 27th November she was busy with household duties.

Case II.—This patient was a primipara about seven months pregnant, who, without a moment's warning, went into one convulsion after another. When I was called in the middle of the night she was almost black in the face and her pulse was uncountable but very fast. I at once did what I could do most quickly, gave a hypodermic of morphine and atropine. As there was no cessation of convulsions at the end of ten minutes, I removed a pint of blood from her arm, with the result that the breathing became less stertorous and her colour a little better; but she kept on having convulsions about every quarter of an hour. As quickly as I could get it, I gave twenty minims hypodermically of fluid extract of veratrum viride and within ten minutes she was resting quietly with a full slow pulse, and did not have another convulsion. About twelve hours after the first convulsion she was prematurely delivered of a dead child.

Case III.—About two months ago a well-known practitioner called me in consultation by telephone on a case of peurperal eclampsia in a primipara who had been delivered four days before. During the four days previous to his calling me up the woman had had about twenty convulsions, in spite of having taken three hundred grains of chloral besides half a grain of morphine. He had called in two physicians, who agreed that her condition was desperate, her pulse being 180, and she was quite unconscious when he rang me up. I recommended a hypodermic injection of twenty minims of veratrum viride, to be repeated every four hours until the pulse came down to normal. On making enquiries of him four days later, he said the veratrum acted like a charm in stopping the convulsions, but it nearly killed the woman. On making closer investigation it came out that she had had the above mentioned large quantity of chloral, so that I told him that I would rather blame the chloral for the patient's pulse disappearing ; for in case I., which had no chloral, the pulse was first rate after twenty-five minims of the tincture. In case I. there was one convulsion eight minutes after the hypodermic of veratrum, presumably before it had had time to get into the blood, but there was no convulsion after it was administered in the other two cases.

In the first paper which I had the honour of reading before this society, twenty-two years ago, on sixty cases of chorea seen at the East London Children's Hospital under Dr. Eustace Smith, I pointed out that incoördination of movements was due to anæmia of the brain, and more particularly of the corpus striatum and optic thalamus, and Reamy, in his classical paper on the treatment of puerperal eclampsia before the American Gynæcological Society in 1895, said "No doubt the acute cerebral anæmia, upon which the eclamptic attack immediately depends in a majority of cases, is due to cerebral vasomotor spasm, and this is due to toxæmia, and the toxæmia to cell activity of the mother and child in utero. The accumulation of these toxic products can only be prevented by securing activity of the kidney, skin and bowels." Lusk, who opened the discussion, entirely coincided with this view of the pathology. There seems to the writer no better way of increasing the flow of urine, and with it of toxines through the kidneys, than by giving copious enemata of salt solution by the rectum, more especially when the woman cannot absorb any by the stomach, on account of the vomiting. This was done in case I. to the extent of one gallon in sixteen hours. But in the meantime we want something to stop the convulsions, and it seems that nothing could be more evident than the promptness with which they were stopped by the veratrum in these three cases, there having been none in two cases, and the last convulsion taking place eight minutes after the injection of twenty-five minims of the tincture in the other case. Prof. H. C. Wood, after careful investigation, informs us that "veratrum lowers the pulse-rate, both by a direct action upon the muscles and by stimulating the inhibitory nerves. It diminishes the force of the heart beat by direct action on the cardiac muscle and produces a general vasomotor paralysis." Vertarum not only stops convulsions, but it produces copious diuresis and diaphoresis. Why it should do the former, when digitalis, which is one of the best of diuretics, is supposed to act by a contrary process, namely, by increasing arterial tension, is explained by Prof. McCorkel by the veratrum overcoming the spasm of the renal vessels, which is even worse for the excreting process than low pressure; for with arterial spasm no urine can be excreted at all. This will also explain why many cases of eclampsia have been observed when there was no nephritis or at least no albumin in the urine ; there was functional insufficiency rather than any organic disease of the kidneys. I have certainly noticed in all my cases that the urine passed by the woman just before or just after the convulsions was so insufficient in quantity in proportion to the solid matter it contained that on cooling without boiling it almost became solid owing to the precipitation of urates. My last case had been vomiting all day, so that no water could get into her blood, while the manufacture of poisons never stopped for an instant. So that one of the first things to do after administering veratrum is to start the rectum to work absorbing pints of salt solution. As Reamy has pointed out, veratrum possesses a great advantage over bloodletting in that, unlike the latter, it leaves the patient none the worse after the depresing effects of the veratrum have passed off. Nor need we be afraid to give a syringeful of twenty-five minims of the tincture. for in one of Reamy's cases to which he was called by Prof. Taylor there were given hypodermics of fifteen and fifteen and twenty minims, or fifty minims in all between a quarter to five and a quarter past six the same afternoon. The pulse fell to twenty-six at seven p.m.; rose to thirty-two at eight; to forty at ten p.m., and she made a good recovery. Moreover, we have in morphine or opium by hypodermic injection the means of quickly removing this alarming symptom. This is fortunate, because the opium itself is a pretty good remedy for cerebral vasomotor spasm, and the writer will in future, as he did in his last case, employ the mixed treatment and then wait at least an hour before repeating them, and only then if the convulsions have not been stopped. In that case the pulse had fallen in an hour from 180 to 100, and eight hours later it was fifty-six. In view of the satisfactory results in these three cases I must revise the opinions expressed in a paper before this society ten years ago, in which I reported all the cases of eclampsia I had had up to that time, and in which I advocated bromides and chloral for the nervous symptoms and the speedy emptying of the uterus for the relief of the kidneys. As regards bromides, I now agree with Edward P. Davis when he says: "No greater mistake can be made than to treat these patients with bromides, as is often done. Rest and increased excretion have invariably in my experience resulted in the disappearance of the symptoms." As regards chloral, I believe that many patients have died from it whose deaths were attributed to other causes, and I now very rarely use it. With regard to the immediate evacuation of the uterus, Lusk said at the

1895 meeting of the American Gynæcological Society: "My own experience is important chiefly in the line of speedy evacuation of the uterus. My experience has been that patients having puerperal eclampsia after the seventh month almost invariably die under medicinal treatment, and it has led me to adopt the method which seems to be becoming the universal practice, of emptying the uterus as soon as possible."

The writer, who followed Lusk, said: "I hope the general tone of the discussion will be in favour of the early emptying of the uterus whenever we feel that there is the slightest danger of puerperal convulsions. Whenever the urine is very much diminished in quantity and loaded with albumin, I think that it is almost criminal for us to remain idle until the kidneys have become permanently injured, when we possess the means of saving that woman's life."

But if veratrum continues to give such remarkable results, I will have to take back what I said before this society ten years ago, and at the Gynæcological meeting five years ago, and advocate leaving the uterus to deal with the fœtus as it deems best, which generally proves to be an easy natural delivery of a dead child. An *accouchement force* is always a misfortune for the woman, and if we can stop the convulsions with veratrum and get the kidneys to work with salt solution per rectum, it is better to leave the delivery to nature.

APPENDICITIS SIMULATING TUBAL GESTATION.

BY

E. R. Secord, M.D.,

Resident Physician, Montreal General Hospital.

Mrs. S., aged 24 years, married, was seen in consultation on Tuesday, August 20, 1901.

Complaints:—Swelling in the right side of the abdomen.

Personal History:—Patient has been married between two and three months and had always enjoyed the best of health, both before and after marriage.

She menstruated in normal course of events one week after marriage; the next period was missed. She had never had any cough, expectoration, pain in the chest, or other symptom of pulmonary disease, nor had she any abnormal symptoms connected with the generative system.

Family History:—Nothing of interest; no tubercular history.

Present Illness:—One week after the date of the usual menstrual period which had been missed, she was suddenly seized with violent sharp, "cutting" pains across the lower abdomen, accompanied by a feeling of weakness, so that she could hardly get home from a neighbour's where she had been visiting, a distance of only a block. Arrived at home, she applied hot fomentations and went to bed. The next morning she was seen by Dr. Bier and had a temperature of 99° F. This morning she passed a small quantity of blood per vaginam accompanied by a small piece of membrane, vouched for by the doctor. There was now but slight abdominal pain, but some tenderness low down in the pelvis; no rigidity or distension, and no tenderness at McBurney's point. No mass of any sort was found.

During the next ten days the patient kept to her bed and the "soreness" gradually disappeared, but as it did so she herself was able to outline a mass in the lower abdomen. Dr. Bier was away at this time, but on his return on the tenth day he could easily outline the mass, apparently situated deep in the pelvis and easily palpable per vaginam. It was but slightly tender. Temperature and pulse normal. Coming to the conclusion that he was dealing with an extra-uterine gestation, he asked me one week later to see the patient with him.

Present Condition:—Patient is a well nourished young woman who, however, says she has lost weight rapidly during her illness. Temperature, 98 2-5° F. Pulse, 70. Respirations, 24.

Respiratory system normal.

Circulatory system normal.

Gastro-intestinal system. - Appetite good, bowels constipated.

Abdomen:—Inspection. No distension, surface quite uniform, and no discolouration.

Palpation. Beginning one inch to the right of the middle line just above the symphysis pubes, and running outward and upward just internal to Poupart's ligament was a cylindrical mass three inches long and one and a-half inches broad. It was hard and insensitive and quite dull on percussion. No mobility was evident from external examination.

Generative system:—Perineum well preserved; cervix pointing distinctly to the left and uterus also pushed to the left; os soft and patulous. Fundus in normal position, being distinctly palpable just mesial to the inner end of the tumour. In the site of the right ovary and running down to the vaginal vault was a hard mass, which by bimanual examination could be slightly moved forward and backward and was directly continuous with the mass felt externally. Left appendages normal. The uterine arteries could be felt pulsating in the vaginal vault much more plainly than usual.

Differential Diagnosis:—Three conditions appeared to me to be the most probable:—(1) A tubal gestation which had primarily ruptured into the broad ligament. (2) An appendix abscess. (3) Suppurative salpingitis.

Considering (1) the absence of tenderness and (2) of fever except at the onset; (3) the situation of the mass, which was much lower than the ordinary appendix abscess, and (4) the history of passage of membrane; I considered the first condition as most probable and advised laparatomy for removal of the gravid tube.

The Operation was performed by me at the John H. Stratford Hospital, Brantford, Ont., on the second day afterward by incision in the median line under ether anæsthesia, and, to my surprise, the uterus and both appendages were perfectly normal, other than for the presence of a very small pedunculated subserous fibroid about the size of a bean which projected from the posterior aspect of the fundus. The mass was situated immediately above and surrounding, but not adherent to, the right ovary, and it was composed of the appendix sloughed off for the lower third, surrounded by the omentum and with five inches of the small intestine closely adherent to the mass.

The adhesions were carefully separated; the omentum, which was of a livid hue, ligated off; and the appendix, of which the proximal two-thirds was greatly distended by hard fæcal concretions, was ligated and removed. A small fæcal concretion about the size of a bean was found lying free in the sloughed off extremity of the appendix.

The patient made an uninterrupted recovery until the seventh day, when a fæcal fistula formed which, however, soon closed. Menstruation quite normal in character commenced on the fourth day after the operation.

December 1, 1901. Patient says she never felt better in her life and has gained about twenty-five pounds since her operation.

In reviewing the facts of the case, the most probable explanation appears to be that there is in reality an intra-uterine gestation which had been interrupted, reflexly or otherwise, by the inflammatory condition of the vermiform appendix. This supposition best explains the absent menstrual period, the passage of membrane, the patulous condition of the os uteri, and the concomitant tumour formation. I perhaps owe an apology for offering a report of such a common condition as acute gangrenous appendicitis, but the chain of symptoms pointing towards the diagnosis of tubal gestation was so strong that it rendered the case of interest more from the standpoint of diagnosis than from that of the exact pathological condition which was finally found to be present. My thanks are due to Dr. Lockhart for much kind advice in preparing the report of this case.

TWO CASES OF ECTOPIC GESTATION.

BY

R. E. Webster, M.D.,

Gynæcologist to the County of Carleton General Hospital, Ottawa.

Cases of ectopic gestation are so commonly met with in the larger gynæcological clinics as to be uninteresting except for some unusual circumstance. The two following cases occuring in the gynæcological service of the County Carleton General Hospital during the last year are interesting. Case No. I., on account of the early diagnosis and removal, due to the intelligence of the patient and the promptness of her family physician in diagnosing the case and calling in the specialist. Operation was performed at the eighth week and removal was accomplished before the patient had suffered any severe hæmorrhage, a result unfortunately uncommon in the practice of the gynæcologist.

Case No. II. is interesting because of the unusual absence of subjective symptoms, there being practically none, the only apparent trouble complained of being menorrhagia and pelvic tenderness. No decidual membrane was passed, to the knowledge of the patient or her physicians, there being little except the physical examinations to indicate the serious conditions present. This case is also interesting owing to the large amount of hæmorrhage which had occurred, apparently very slowly, causing no great shock or any attack of syncope, and in fact very little trouble to the patient other than anæmia and lassitude.

Case No. I.—Mrs. B., patient of Dr. R. B. MacKay, Manotick, Ont., æt. 30, primipara, formerly a trained nurse (which accounts for her early recognition of an abnormal condition of her menstrual flow), gave a history of a perfectly regular menstruation before and after her marriage (married two years) until six weeks previously, when she ran over her time two weeks, then began to have an irregular flow with slight pain in her left side at intervals; pain was never severe, however. Dr. MacKay, on being consulted, suspected extra-uterine pregnancy, and after examination, made a diagnosis of left tubal pregnancy, calling me in to confirm the same.

The pelvic examination showed the uterus normal in size, a slightly bloody discharge from the cervix, which was softer than normal. The left tube showed as a rounded mass, close to the uterus, movable and tender. Taking into consideration the previous regularity of menstruation, with the present irregular flow, pain, and enlargement of the tube, the diagnosis was satisfactory and the patient being advised of her condition entered the hospital immediately. During the night preceding the operation she complained of pain in left side, much more severe in character than before, requiring a hypodermic of morphia to relieve it.

On opening the abdomen the following morning, the left tube was found covered by the omentum, which was slightly adherent to it. The tube was distended to about the size of an English walnut, the enlargement being about half an inch from the uterine end and the body of the uterus being well separated from the tumor. The uterine end practically formed a pedicle for the tumor. The round enlargement lay to the inner side; the ovary was small and atrophic. A slight perforation, apparently very recent, had occurred at the upper and anterior surface, and a few small clots escaped on separating the adhesions of the omentum which had been "doing guard at the breech."

The right tube showed a slight constriction about an inch from the fimbriated extremity. The right ovary was normal. Some slight hæmorrhage occurred on separating the omental adhesions from the tube. The tube was clamped, tied off, and removed successfully. On opening it fœtal elements were easily demonstrated.

This case is interesting from the point of early diagnosis; the patient, having had a large gynæcological experience in one of the Brooklyn hospitals, recognized the possibilities early; and the abnormal menstruation occurring, her intelligence, with the early diagnosis of her family physician and his promptness in calling in the specialist, makes the case unique among my list of operations performed for ectopic gestation—the diagnosis of the conditions being made and removal accomplished not later than eight weeks after the occurrence of the pregnancy.

The patient made an uninterrupted recovery, leaving the hospital at the end of the third week.

Case No. II.—This patient was kindly referred to me by Dr. A. Leslie Foster of this city. Mrs. S., æt. 24, multipara, has always been strong and healthy. Menstruation began at 15 years and has always been normal since the first three years of menstrual life, during which time she suffered from dysmenorrhœa. Has been married five and a-half years, two children, youngest three years old; no history of any miscarriages since.

Present illness began five weeks ago when menstruation began a week ahead of time, the flow lasting two weeks instead of the usual five days; no excessive flow, however, occurred. When the flow ceased a dragging pain was felt in the pelvic region, which gradually increased until she was forced to remain in bed. No other symptoms occurred and one week later when I was requested to see the case by Dr. Foster, the patient complained only of soreness across the lower part of the abdomen.

Physical examination showed a mass to the right and behind the uterus, which was very tender; patient very anæmic; pulse normal; temperature, 99° F. She was sent into the hospital, and, on making an examination under anæsthesia, an irregular doughy mass was discovered in the posterior cul de sac; the right tube was enlarged and continuous with the mass. Hæmatoma from a ruptured tubal pregnancy was suspected, but the diagnosis was not very clear on account of the absence of symptoms.

The day following examination the patient began to menstruate and the flow lasted six days, quantity rather more than normal. After menstruation ceased patient was prepared for operation, and, on opening the abdomen and separating some coils of small intestine and omentum which were bound down to the upper and posterior surface of the uterus, an enormous blood clot was found, filling the cul de sac of Douglas. Free bleeding occurred when this was disturbed, but was quickly controlled by clamping the right tube which was very much distended. The right tube was removed and found to contain the remains of a tubal pregnancy situated about two inches from the uterine end. Rupture had taken place here and a hæmorrhage had occurred into the posterior cul de sac, a clot of probably a quart filling the pouch of Douglas and lower abdomen.

The left tube, which was tortuous and bound down behind the uterus, was freed from adhesions, the right tube tied off and removed, the mass of clot emptied, the abdominal toilet thoroughly performed, and the abdomen closed in the usual manner.

The patient made an excellent recovery, leaving the hospital three weeks after the operation. Taking into consideration the size of the blood clot, it seemed remarkable that no syncope, shock, or severe pain was experienced by the patient, her family physician being called in because of the dragging pain and soreness over the abdomen.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Peritoneal Tuberculosis.

Christian Fenger, M.D., Chicago. "Treatment of Tuberculosis of the Peritoneum." *Annals of Surgery, Dec., 1901.*

The author of this paper reviews our knowledge of this subject from 1825 to the present time and, in common with others, recognizes three forms of peritoneal tuberculosis:—

(*a*) The ulcerative or suppurative form.
(*b*) The serous exudate form.
(*c*) The adhesive form.

Up to 1884 all cases of peritoneal tuberculosis which were reported as cured were regarded as mistakes in diagnosis. When Köning reported his first series of 4 cases with 3 recoveries in 1884, the surgical treatment of peritoneal tuberculosis became very popular, so that in 1889 he was able to report 131 cases, 74 of which were cured and 33 improved. Relapses after apparent cure or improvement are common, and Von Winckel does not consider that a patient has recovered unless he has survived five years.

In considering the value of operative treatment in the various forms of peritoneal tuberculosis as a therapeutic agent and not as a necessary surgical procedure in such complications as obstruction or perforation, the author quotes Telcky as forming the following conclusions after a critical study of the literature on the subject:—

(1) In the miliary, serous, exudative form, operation is followed by the best results.

(2) In the ulcerative form, an unfavourable operative prognosis must be given.

(3) In the adhesive form it is difficult to give definite indications for operation, but it is probable that operation is advisable when, after

prolonged conservative treatment and observation, there is no tendency towards recovery.

In serous cases where a primary operation has failed to cure a second or even a third or fourth has been followed by success.

Regarding the technique of the operation, incision, withdrawing the fluid, sponging the peritoneal cavity dry, and closing the wound, give on the whole the best results.

Drainage is undoubtedly frequently followed by fæcal fistula, and attempts at successfully excising tuberculous ulcers of the bowel are usually followed by a similar sequela.

Fenger closes his paper by quoting Borchgreviuk's views, which are opposed to operative treatment *in toto*, as may be gleaned from the following quotation:—

"Are there any cases of tuberculous peritonitis for which laparotomy is the only means of cure or in which laparotomy is the best method of treatment." Brochgreviuk does not hesitate to state that even the serous tuberculous peritonitis is a territory which surgery must hand back to the internal medicine clinic, with thanks for the splendid opportunity which a misunderstanding gave to the profession by means of laparotomy to study tuberculosis in one of the large cavities of the body.

Operative Treatment of Paralytic Club Foot.

Royal Whitman. "The Operative Treatment of Paralytic Talipes of the Calcaneous Type." *Amer. Jour. of the Med. Sci., Nov. 1901.*

The author describes the primary deformity as well as the secondary deformities in this important disability, and criticizes the various mechanical devices employed to correct the deformity and overcome the difficulty in locomotion, as well as the surgical procedures usually undertaken to assist the patient. He shows that the insecurity in walking, though caused directly by the paralyzed "calf muscle," is greatly exaggerated by the fact that the weight must be supported on the astragalus perched upon the displaced os calcis, and the instability is of course increased when there is lateral distortion of the foot.

The treatment which he recommends consists in the removal of the astragalus, which allows of sufficient backward displacement to transmit the body weight nearer towards the centre of the foot. Tendon shortening, tendon transplantation, and arthrodesis are subsidiary measures of importance.

Astragalectomy is performed under the bloodless method, through a long curved incision from the tendo Achillis to the head of the astragalus, extending below the external malleolus. After excising the astragalus, the cartilage is removed from all exposed bone, the tendo Achillis shortened by Willett's method, and the proximal ends of the two peroneii muscles are inserted into the tendo Achillis, after the manner first described by Nicoladoni. The wound is closed and the foot is displaced backwards, so that the internal malleolus is brought into contact with the scaphoid bone, and a plaster bandage applied, fixing the foot in an attitude of slight plantar flexion.

The patient is advised to wear a brace of simple construction, consisting of two lateral bars passing in front of the malleoli and united by a sole piece at the metatarso-phalangeal articulation, as well as in the upper end by a steel bar running in front below the tubercle of tibia. When bony ankylosis does not follow the operation, the wearing of some such splint would be very necessary.

Treatment of Renal Calculus.

J. Hutchinson, Jr., F.R.C.S. "On certain points in the Operative Treatment of Renal Calculus." *Brit. Med. Jour., Oct. 19, 1901.*

Hutchinson, in a paper read before the surgical section of the British Medical Association, disapproves of the unnecessary extensive incisions into the kidney in nephrolithotomy and points out the advantage of using X-rays in locating stone in the kidney and ureter. He summarizes his views as follows:—

(1) The X-rays (except perhaps in stout subjects, or in the case of very small stones) enable an exact diagnosis of the size, position, and number of renal calculi, to be made.

(2) They enable the surgeon, in performing the operation of nephrolithotomy, to do so with the least possible injury to the kidney, and to dispense with bringing that organ on to the surface of the wound.

(3) Suitable incisions, made directly over the renal calculus through the renal pelvis, are to be preferred when practicable. Such wounds of the pelvis heal well.

(4) Before the operation it is more important to get the urine into a healthy condition. The administration of urotropine before and afterwards is of much value.

(5) Renal calculi, however small, should be operated on as soon as they are positively diagnosed. The danger to the kidney structure and the patient's life bears no relation to their size.

Primary Pneumococcus Arthritis.

Dudley B. Allen, M.D. and Cabot Suel, M.D. "Pneumococcus Arthritis Primary in the Knee-Joint." *Annals of Surgery, Oct., '1901.*

According to the authors, but three cases of primary pneumococcus arthritis have been recorded, the present being the fourth case.

"The patient was a female, 40 years old, who was seized with "cramps" in the abdomen three or four days previous to her admission to the hospital. On the following day she was seized with pain in the left knee, which was relieved by the exhibition of salicylate of sodium for twenty-four hours. On the third day the knee became more swollen, and on the fourth day the joint was markedly distended and tense, temperature, 98.4° F. Aspiration of the synovial sac showed thick yellow pus.

Free incision with irrigation and drainage was performed, but the patient's condition did not improve, and amputation of the thigh at the junction of the lower and middle-thirds was carried out two days afterwards. The patient died ten days afterwards with marked symptoms of sepsis.

Examination of the joint pus showed pneumococcus as well as from the stump just previous to death.

In citing Cave's collection, recorded in the *Lancet* for January, 1901, they show that in previously recorded cases, cultures of the pneumococci were obtained from other organs, whereas in the present case no pneumococci were discovered, other than in the affected tissues of the stump. The absence of the infecting organism from the blood and organs would seem to show that death was due to toxæmia. So far as reported cases go, the mortality has been 75 per cent. They believe that the organism is carried by the blood.

A. E. Garrow.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER,

Ocular Manifestations of Gonorrhœa.

J. B. LAWFORD, F.R.C.S. "The Relation of Gonorrhœa to Diseases of the Eye (Excluding Purulent Ophthalmia). *Proceedings Brit. Med. Association, Aug., 1901.*

The sequelæ of gonorrhœa are almost as baneful in their character as those of syphilis. Although the gonococcus is clearly the active agent in the production of lesions in the genito-urinary tract, yet, its rôle in reference to gonorrhœal infection and the distal or so-called metastatic manifestations, is less fully determined.

In some cases the organism has been detected in the blood, in the fluid within joints, in exudations around joints, in the endocardium, and in other tissues. In other cases it has not been found; while yet in others a mixed infection has been noted, as evidenced by the presence of staphylococci and streptococci.

Mr. Lawford holds that the frequent association of gonorrhœal arthritis with iritis or with endocarditis, etc., is not that of cause and effect, but rather accidental. The materies morbi has certain seats of election in the tissues, and may appear in several such tissues at or about the same time. Fournier's patient was a case in point, the man had four attacks of gonorrhœa. During the first attack he exhibited ocular lesions only, during the second and third arthritic and ocular lesions, and during the fourth arthritis only.

The ocular lesions exclusive of the purulent ophthalmia, are a mild form of conjunctivitis, scleritis, episcleritis, iritis, irido-cyclitis, and neuro-retinitis. This form of conjunctivitis is by many held to be metastatic in origin, while some few consider it as an infection by gonorrhœal poison, which has been greatly attenuated. Iritis may or may not be associated with arthritic lesions, as also may the other lesions mentioned. All these lesions have a marked tendency to relapse or recur, and leave behind them a marked vulnerability of the tissues, which may persist for a long time.

In the discussion which followed on the reading of this paper, Darier of Paris mentioned that he had seen iritis follow gonorrhœal ophthalmia and thought it was due to gonorrhœal infection.

Mr. Lawford also mentioned the occurrence of retinitis, apparently, thrombotic in character, and neuro-retinitis, also suppurative keratitis, in cases of severe pyæmic character.

The question of the nature of the systemic infection is in doubt. It has yet to be decided whether it is a pure gonococcus infection, or a mixed infection due to gonococci and pyogenic micro-organisms, or yet again a toxæmia induced by the poisonous products of the gonococcus, manufactured in the tissues primarily attacked.

Toxic Amblyopia.

W. Zentmayer. "Alcohol-Tobacco Amblyopia with Retinal Hæmorrhages." *Annals of Ophthalmology. July, 1901.*

J. Herbert Fisher. "Influence of Nicotin on Ganglion Cells; its bearing on the Pathology of Tobacco Amblyopia." *Ophthalmic Review, June, 1901.*

J. H. Parsons. "Note on Pathology of Toxic Amblyopia." *Brit. Med. Jour., June 8, 1901.*

Zentmayer's deductions are drawn from cases observed by himself and others, recorded by various authorities. Sclerosis of the retinal vessels follows on the abuse of alcohol, and the diseased walls of the vessels give way under the increased vascular tension. The influence of tobacco alone in causing these changes could not be demonstrated.

Fisher bases his theory on the result of Langley's experiments with nicotin. Langley found that either the injection of nicotin into a vein, or the local application of it to an exposed cervical ganglion, had the effect of destroying the conduction of impulses. Langley further concluded that nerve impulses, whether motor, secretory, vasomotor, or inhibitory, are arrested in an animal under the nicotin, provided they have to traverse ganglion cells.

Fisher holds that these results have an important bearing on the subject of tobacco amblyopia. If it be true that the nerve fibres from the macula traverse ganglion cells, *en route* to the cerebral cortex, and the fibres from the periphery of retina pass direct, then the action of nicotin in causing the central scotoma is clearly perceived. Several authorities already hold that the scotoma is not due to neuritis of the macula bundle of fibres primarily, but to a degeneration of the ganglion cells of the macula.

Parsons mentions the use of Nisal's method of staining in the detection of degeneration of the retinal ganglion cells in tobacco amblyopia. Parsons finds that nicotin acts essentially upon the synapses of the preganglionic fibres around the nerve cell, not upon the nerve cell itself.

The action of nicotin is a double one:—(1) vasomotor constriction.

hence the effect most marked in the sparsely supplied macular region. (2) Paralytic upon the synapses of the cone fibres, or of the inner granules, or of both.

Periotomy in Varions Eye Diseases.

T. Pridgin Teale. "Periotomy in Episcleritis, Iritis, Herpes Ophthalmicus, and Purulent Ophthalmia." *Lancet, March 30, 1901.*

Teale finds that by laying bare about one-quarter of an inch of the sclera, immediately around the cornea, and dividing all vessels entering or emerging from the sclera, he is able to exert a markedly curative influence in obstinate cases of diffuse congenital keratitis and the disease mentioned above. The result in a case of subacute purulent ophthalmia is very remarkable, to say the least.

It was a congenital infection of several days duration, presenting marginal ulceration of the cornea and opacity completely obscuring the pupil. Periotomy was performed and the progress of the disease at once arrested, so that in a week the child was sufficiently improved to return home. Six months later it was difficult to detect which had been the affected eye.

Treatment of Blinking.

Wolffberg. *Wochenschrift f. Therapie und Hygiene des Auges, Mar. 28, 1901.*

Wolffberg refers to those cases of excessive blinking which are more of the nature of a neurosis or bad habit. The other varieties, which are due to conjunctivitis and similar disorders, can be easily relieved. The type under consideration is mainly found among anæmic and neurotic children. Wolffberg finds that by simply occluding one eye with a bandage for several days the twitching is overcome in some cases and ameliorated in others. The explanation given is that blinking interferes so greatly with vision, when only one eye is in use, that the child exerts all its will power to overcome it and often succeeds. It is difficult to blink and whistle at the same time; and one can often notice in cases where the blinking is not due to an organic eye lesion that on attempting to whistle, the patient ceases to blink.

J. W. Stirling.

Pathology.

UNDER THE CHARGE OF J. GEORGE ADAMI.

The Relationship of Cholelithiasis to Disease of the Pancreas.

FLEXNER. "On the Occurrence of the Fat-Splitting Ferment in Peritoneal Fat-Necroses and the Histology of these Lesions." *Jour. of Exper. Med., Vol. II., 1897.*

"Experimental Pancreatitis, I." Contribution to the Science of Medicine. *Welch's Festschrift, 1900.*

"Experimental Pancreatitis, II." *University of Pennsylvania Med. Bull., August, 1901.*

OPIE. "Experimental Disseminated Fat-Necrosis." *Welch's Festschrift, 1900.*

"The Relation of Cholelithiasis to Disease of the Pancreas and to Fat-Necrosis." *Amer. Jour. of the Med. Sciences, Jan, 1901.*

Ibid. Jour. Exper. Med., 1901.

"The Etiology of Acute Hæmorrhagic Nephritis." *Johns. Hopkins Hos. Bull., Vol. XII., 1901.*

HALSTEAD. "Retrojection of the Bile into the Pancreas, a Cause of Acute Hæmorrhagic Pancreatitis." *Ibid, Vol., XII., 1901.*

ILL, E. J. "Acute Pancreatitis and Fat-Necrosis." Society Report, Amer. Assoc. of Obstet. and Gyn., *American Medicine, October 26, 1901.*

That some relation had been held to exist between cholelithiasis and pancreatitis for a reasonably long time previous to Opie's work, is a fact mentioned in his papers. What the relation was and how close it is he has determined. The general idea held was that when the two conditions co-existed the pancreatitis was the result of inflammation set up in the gall-passages and spread from there by the pancreatic ducts to the pancreas. Lancereaux thought that a stone in the papilla of Vater could occlude the ducts, and produce conditions favourable for the growth of micro-organisms. Ebstein discussed the opportunity of a stone lodged in the gall-ducts, near the bifurcation, to occlude the duct of Wirsung.

In Flexner's experiments, 1897, detailed in his paper "On the occurrence of fat-splitting ferment in peritoneal fat-necrosis and the histology of these lesions," he did one experiment which might have thrown some light on the subject, had the subject been in mind. At that time he tied the pancreatic duct in a cat and produced a pancreatitis, but, it is true, no fat-necrosis except that noticed at the site of the ligature.

In a later paper in Welch's Festschrift, he gives the results of the injection of various materials—acids, alkalies, suspension of bacteria and fungi — into the pancreas through the ducts, with the result that he produced fat-necrosis in nearly all the cases. The suspension of bacteria, however, produced none. In the same volume (Welch's Festschrift), Opie contributes his first paper on the subject, and in this communication he gives details of very suggestive experiments. In these experiments he ligated the ducts of the pancreas and in some cases was able to demonstrate fat necrosis and in some none. But if, after tying the ducts, he injected pilocarpin into the animal to stimulate secretion, he produced widespread necrosis. He also transplanted the ducts into subcutaneous tissue and in that tissue produced fat-necrosis. Following these experiments a case came to him from the medical wards by way of the surgical operating room which suggested at least, the relation between gall-stone disease and pancreatitis. The patient had had a history of cholelithiasis and the attack, following which he died, was a typical one of colic. The autopsy showed the presence of a stone in the common duct, and this so placed that it might easily occlude the duct of Wirsung. This case with seven others gleaned from the literature served as a basis for his theory.

In the past year another case went to autopsy that was still more suggestive. This was one of acute hæmorrhagic pancreatitis. After a careful dissection a stone was found in the diverticulum of Vater that was but 3mm. in diameter but which was apparently of sufficient size to occlude the passage. The case strengthened Opie's theory and formed the basis for that of Dr. Halstead, which was that a stone lodged in the papilla could act as the plunger in a hydraulic ram and so assist in the forcing of bile into the pancreas, the force being that furnished by contraction of the gall-bladder.

The idea of the rôle that the bile played, Opie had mentioned some time before the publication of his last experiments at a meeting of the Hospital Medical Society. In his paper Opie describes the experiments which he devised to demonstrate his theory. He injects bile in amounts varying from 3 to 5 cm. through the pancreatic duct into the pancreas, either through an incision into the duct or after opening the duodenum through the papilla of Vater. In his seven experiments he was able to demonstrate a hæmorrhagic condition of the gland with abundant fat-necrosis. He concludes that a stone in the diverticulum of Vater may obstruct the flow of the bile into the duodenum and cause it to pass towards and into the pancreas. That because of anatomic conditions this may be impossible, he also discusses. That the bile is the active agent in the cause of the pancreatitis there seems to be no doubt.

But acute hæmorrhagic pancreatitis may not be the only result of blocking of the pancreatic duct. This is stated in the conclusion of a paper, also by Opie, on "The relations of cholelithiasis to disease of the pancreas and to fat-necrosis." In the summary of this paper he says that, as the result of occlusion, acute pancreatitis may result with death in forty-eight hours, or that a suppurative pancreatitis may result with death late, weeks or months after the onset, or finally, that a chronic pancreatitis may be caused.

The latest experiments in the subject come from the laboratory of Flexner at the University of Pennsylvania, and are a continuation of his former work, and confirm Opie. He shows that gastric juice also will produce pancreatitis, and that blood alone will cause a chronic form of the disease. Blood serum alone will not give the result. So much for the experimental part.

In a late number of *American Medicine* is the report of a case that will serve as a further substantiation of the theory. Ill reports a case in which there was a history of gall-stones. In the last attack the symptoms were much more severe, and obstruction of the bowels was simulated. At operation the pancreas was found to be diseased and the wound was drained. The patient did well until seven weeks after operation, when she had a relapse from which she died three weeks later. At autopsy stones were found in the gall-blalder and the pancreas was entirely replaced by fibrous tissue.

The experimental work has been admirably carried out and the theory has become beyond reasonable doubt a fact. But Voltaire is still apropos "The bile makes us sick and bilious, but without the bile we could not live."

P. G. Woolley.

Reviews and Notices of Books.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and Specially Prepared Articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, etc., etc., by leading members of the Medical Profession throughout the World. Edited by HENRY W. CATTELL, A.M., M.D., Philadelphia, Eleventh Series, 1901. Philadelphia, J. B. Lippincott Company. Canadian Agent, Charles Roberts, Montreal.

Volume I. The first volume of the Clinics for 1901 contains a great deal of matter of practical interest to all classes of the profession. Where there is so much valuable material contained in short practical papers it is almost impossible to do justice to a book in a review of reasonable length, and one can therefore only notice some of the articles. Hallopeau (Paris) gives a good general review of the numerous methods of treating eczema; his article contains many new suggestions which should prove of benefit to the physician in a stubborn case. H. Batty Shaw (London) furnishes some interesting statistics of 100 cases of Aortic Aneurism. Campbell Williams has an article on Gonorrhœal Rheumatism. The use of cocaine as an analgesic in obstetrics is described by Dolèris of Paris and a report given of 25 cases, while the advantages and otherwise of the method are fairly discussed. To the laboratory worker Walmsley's article on photomicrography will be found most useful, as he gives directions for the use of the simpler forms of microscope as well as those made specially for this work. The volume closes with a review of the progress of medicine during the year 1900, by N. J. Blackwood. The number is well illustrated and creditable to both publisher and contributors.

Volume II. The second volume of the series contains several articles on cocaine analgesia by lumbar puncture, both from the view of general surgery and of obstetrics, Dolèris claiming for it an oxytocic effect. Schamberg (Philadelphia) gives a description of the present epidemic of smallpox in an article beautifully illustrated with numerous plates which show better than any description could do, what are the characters of the eruption. There are three lectures on locomotor ataxia, Frenkel of the Freihof Sanitarium in Heiden, Switzerland, describing his movement therapy, Allen Starr of New York the disease in general, and Fournier of Paris, its detection in the earliest stages. John R.

Wathen of Louisville discusses the operation of splenectomy and reports a successful cure. Blackader of Montreal discusses the acute dilatations of the heart met with in childhood and adolescence. At the end of the volume Newman Dorland furnishes a list of the newer medical words with their definition and pronunciation.

Volume III. opens with a very valuable article, well illustrated, on phototherapy after Finsen's methods by Valdemar Bie of Copenhagen. The plates, besides showing the apparatus in use, give a number of the results of treatment in cases of lupus vulgaris, results certainly not obtained by any other method in this disease. Useful and rather out of the ordinary run is Routh's article on the influence of pregnancy on the prognosis and treatment of coexisting acute and chronic disease, taking up seriatim the diseases in which by pyrexia or toxæmia the course of pregnancy may be influenced. "Cerebellar Degeneration due to Intestinal Intoxication" is the rather startling title of an article by Augusto Murri of Bologna. The diagnosis is based on the fact that cerebellar degeneration was found post mortem and atrophy of the intestinal mucous membrane was the only other pathological lesion found. No attempt is made, and perhaps wisely, to explain why the poison from the intestines selected only certain cells in the cerebellum for its action. The portion devoted to surgery contains several interesting lectures on the affections of the gall-bladder and appendicitis.

These three volumes mark a distinct improvement in the quality of the contributions over the late numbers of the International Clinics and the editor and his collaborators should meet with increased encouragement. in that it should still further increase the popularity of this valuable quarterly.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 15, 1901.

JAMES PERRIGO, M.D., PRESIDENT, IN THE CHAIR.

Dr. C. A. Peters, of Montreal, was elected a resident member. Drs. P. T. Woolley and G. A. Charlton, Fellows in Pathology, McGill University, and Dr. John Collison, Resident Physician, Civic Hospital, were elected temporary members.

Intestinal Obstruction by a Foreign Body.

DR. J. J. ROSS read a report of this case and DR. D. D. MACTAGGART demonstrated the pathological specimens from the post-mortem, which he also described. See page 933 of the December number.

A Case of Anthrax.

DR. E. M. VON EBERTS reported this case, exhibiting slides under the microscope showing the bacilli in the excised sore. The report will be published in the February issue.

DR. G. E. ARMSTRONG stated that the points which are usually recognized in anthrax cases were very well brought out in this one. The appearance of the point of infection very closely resembled a dark nævus. The surrounding infiltration was not deep, the vesicles were clear and filled with a dark hæmorrhagic fluid, while there was the characteristic absence of tenderness. One sees sometimes mentioned the difficulty of differentiating the primary sore of anthrax from a carbuncle or furuncle, but here one could handle the sore freely without causing any pain. The most striking feature of the man's general condition when he came in was the extreme degree of collapse, which the speaker compared to the algide stage of cholera. The patient was blue, livid, cold, with practically no pulse. The purpuric condition described by Dr. von Eberts was more marked than is usually the case, the discoloration was in stripes across the back and abdomen, covered a large surface and looked just as though the man had been squeezed between heavy weights. Another feature was the bright scarlatiniform eruption, which looked like an enormous area of spreading erysipelas.

The treatment undoubtedly had been eminently successful, the early incision controlled the infection and recovery practically dated from this.

So far as Dr. Armstrong knew, this was the first undoubted case of anthrax on the records of the Montreal General Hospital.

Dr. G. G. Campbell asked if the diagnosis could be made from the discharge from the sore or if it was necessary to excise it in order to demonstrate the bacilli. He had recently had come to him a man who was at work sorting hides and who presented a sore on the wrist without much local infiltration or tenderness but with enlarged glands at the elbow and axilla and inflamed lymphatics. An examination of what could be squeezed from the sore showed the presence of the ordinary cocci only, and he had questioned whether one could exclude anthrax in this manner.

Dr. von Eberts replied that there had been no difficulty in demonstrating the bacilli in the scrapings and in the fluid from the vesicles. which, however, was not pus.

The Relation of Abdominal Hysterorrhapy to Subsequent Pregnancy.

Dr. F. A. Lockhart read this paper, of which the following is a summary :—

The effect upon subsequent pregnancy of abdominal hysterorrhaphy depends almost entirely upon the method of performance of the operation. The suture should include the urachus and a portion of peritoneum on each side of the incision, the deeper structures, such as fascia and muscle, being left severely alone. It should be passed across the anterior surface of the uterus just in front of a line joining the two uterine extremities of the round ligaments. In time the uterus draws down a tongue of peritoneum which forms a false ligament, thus allowing the organ to become a mobile organ. This was well shown in two cases where the abdomen was opened after women had given birth to children, and the ligament in each case measured about one by three centimetres.

The following is a list of the cases of Dr. Lockhart's which he had been able to trace, with one exception, where pregnancy followed the operation.

Case I.—Mrs. N. P., 38 years of age, was subjected on February 2, 1900, to curetting, amputation of the cervix, double colporrhaphy and ventro-fixation. Previous to this she had given birth to three full term children and had miscarried twice. All of her labours had been extremely difficult and painful, the first two being terminated by the high application of the axis traction forceps, the application and contraction being interferred with by a certain amount of pelvic contraction.

On October 1, 1901, Dr. D. J. Evans confined her of a large, full-term child, the labour again requiring high application of forceps on account of the retention of the head at the pelvic brim after full dilatation had occurred. The patient stated that this had been her easiest labour, and it was followed by no complications, the uterus returning to the normal position of slight anteflexion.

Case II.—Mrs. F. W. B., 28 years of age, underwent curetting, posterior colporrhaphy, igni puncture of both ovaries, and hysterorrhaphy in April, 1899. She had already been delivered of one full-term child by the high forceps operation and had once miscarried.

In December, 1900, Dr. A. D. Stewart delivered her of a large full-term male child, the labour being a very easy forceps delivery. The after pains were slight, her convalescence was interrupted, and the uterus returned to good position.

Case III.—Mrs. M., aged 25 years, had curetting, left oöphorectomy and hysterorrhaphy performed in March, 1899. Previously she had given birth to two full-term children, nature of labours unknown. In the following February, Dr. W. A. Molson confined her of an eight-month child, the premature labour being caused by a very severe fall. The delivery was natural and the convalescence was uneventful. There had been no disturbance of any kind during her pregnancy and the uterus was in its usual position after labour.

Case IV.—Mrs. S. (reported by Dr. W. C. Mills, of Chateauguay, N.Y.), had an uneventful pregnancy terminating naturally after an hysterorrhaphy.

Case V.—Mrs. W., secundipara, in November, 1900, underwent curetting, repair of the cervix and perineum and ventro-fixation.

Dr. J. C. Cameron gave an account of the subsequent history of the last patient, of which the following is an abstract.

Mrs. W. was discharged cured from the Montreal General Hospital on December 19, 1900, her last menstrual period began on January 10, 1901, and lasted three days.

Pregnancy.—No special symptoms except a dull dragging pain in the right side when she turned in bed or lay on her right side ; this pain disappeared when she lay on her back or turned on her left side.

Labour.—First symptom was rupture of membranes and the escape of a large quantity of water at 11.30 p.m. on October 14th. Two hours later she was complaining of a sharp cutting pain over the pubes and a dragging sensation in the hypogastrium when she lay on her right side. The abdomen was much distended, more prominent on the right side ; back of the fœtus could be palpated anteriorly and to the left, and the fœtal heart was heard on the left side. Vagina was hot and dry ; cervix was high up and held close against the pubes ; os soft and patulous;

presenting head could be felt when the finger was pushed through the cervix. No labour pains, temperature normal, pulse 95. Patient's condition remained unchanged on October 15th and until noon on the 16th, when strong pains set in. She was brought to the maternity at 1.30 p.m. At 7 p.m., os was well dilated and pains strong and bearing down. The head lay transversely and flexion was not good ; sutures and fontanelles obliterated and riding of the right parietal bone. The head was not impacted, for the finger could be passed easily behind and to the sides of it. Fœtal heart sounds were strong. At 9.30 the head seemed to descend slightly with a jerk, and then came to lie in the oblique diameter instead of the transverse. The occiput lay in the right side of the pelvis, although the back was turned towards the left, and the fœtal heart sounds were heard on the left side. As no progress was being made forceps were applied at 10 p.m., and a slight traction downward and backward brought the head down upon the perineum ; the blades were removed in three minutes. The cord was not pulsating and the child was dead. It weighed eight pounds. The placenta was high up, and as it descended to the L.U.S. the fundus was felt to spring forward and bend towards the pubes, and a strong thick band was felt holding it firmly in that position.

Puerperium was uneventful ; during the first week the fundus was drawn markedly over to the left side, and the fixation ligament could be felt directed upward and backward, from the abdominal wall, but when the uterus became a pelvic organ the ligament was directed downward and backward. The most comfortable position for the patient was on the back or left side.

In this case there was marked asynclitism, the head being forced down upon the pubes driving the left parietal bone beneath the right parietal. The direction of the uterine force was to the front and not in the axis of the brim, consequently the expelling force was wasted for the most part against the pubes and the head did not descend. The same faulty direction of the uterine expelling force caused the great overlapping of the parietal bones which produced so great a compression of the brain that the child perished. In some of the reported cases the anterior wall of the uterus was prevented from developing by the fixation ligament and the posterior wall stretched out enormously and formed the bulk of the uterine covering of the fœtus. The difficulty of delivery in such cases arose chiefly from the presenting head being driven back against the promontory. In the present case the anterior wall grew and took its share in the formation of the fully developed uterus, but the pull of the fixation ligament prevented the direction of the expelling force from being exerted in the proper direction and the head was fored down anteriorly upon the pubes. A slight pull of the forceps accomplished easily what the most violent continuous uterine action had failed to do.

By palpation and auscultation of the abdomen the diagnosis would have been L.O.A., by palpation of the excavation it was R.O.A. How could the back lie to the left side and the occiput be engaged in the right side of the pelvis ? The only explanation is that the head was twisted upon the body, which was held firmly clasped between the anterior and posterior uterine walls and prevented from rotating so as to accommodate itself to the position of the head engaged in the pelvis. The fixation ligament prevented the uterus from turning towards the right side, and as a consequence a decided twisting of the neck took place.

Ventro-fixation is one of the best means available for the relief of certain forms of uterine displacement which make a woman's life miserable and unfit her for performing her duties as a wife and mother. Among the poor who are compelled to work harder than those in easier circumstances, this operation seems to be of the greatest service, but when it is performed upon child-bearing women great care should be taken to make the ligaments in such a way as to interfere as little as possible with subsequent pregnancy and labour. From the study of this case it seems to be of prime importance that the ligament be not too high up on the fundus and that it be as nearly as possible in the centre in order that the uterus may not be rotated to either side and held attached there.

In the management of a subsequent pregnancy one should be prepared to interfere at any time and induce labour. It is probable that in this case the child would have had a better chance if labour had been induced at the end of the eighth month. In the management of labour too much should not be expected of the uterus, which is so heavily handicapped, and the early use of forceps would seem to be the wisest course of procedure in case of difficulty or delay. Regarding the influence of ventro-fixation upon subsequent pregnancy and labour, we are justified in concluding that the operation does not necessarily affect either injuriously, but it may do so, and that the size and situation of the ligament are the chief determining factors.

Dr. A. L. Smith thought that all the troubles that had followed the performance of ventro-fixation had been due to the fixation ligament being formed at the wrong place, so that it interfered with the proper development of uterus during pregnancy. He stated that of late years he had been doing Alexander's operation in preference to this more often than he had formerly done. As a suture material he had at first used silk, then silk-worm gut, and latterly chromatized catgut, and this he preferred.

Stated Meeting, December 6, 1901.

JAMES PERRIGO, M.D., PRESIDENT, IN THE CHAIR.

Dr. Walter L. Barlow, of Montreal, was elected a resident member.

Mitral and Tricuspid Valvular Disease.

DR. G. A. BROWN reported this case and exhibited the heart. To be published later.

Three Cases of Puerperal Convulsions Treated with Veratrum Viride.

DR. A. LAPTHORN SMITH read this paper. See page 30.

DR. REILLY asked Dr. Smith how he was able to estimate 20 per cent. of albumin. He had never seen anything like 20 per cent. of albumin, the usual amount being two or three parts per thousand.

DR. G. A. BROWN stated that recently he had seen quite a number of favourable reports of veratrum viride in eclampsia. He believed that the reason that drugs given by the stomach in this condition were generally useless was due to want of absorption. He had lately had two cases of eclampsia occurring just after delivery in which 30 grains of chloral given per rectum had been beneficial. With regard to saline injections into the bowel, he thought a difficulty arose after labour from the tendency of the uterus to relax if the binder was not used and it was impossible to give a large amount of fluid by the bowel if the binder was not removed. A better plan would be to introduce normal saline subcutaneously in the region of the breast.

DR. F. R. ENGLAND asked Dr. Smith what his practice was in regard to convulsions occurring before labour. In his own experience he had made a practice of emptying the uterus as soon as possible, and the resulting hæmorrhage had satisfactorily relieved the kidneys. In these cases of convulsions after delivery he thought the rational method of treatment was to favour elimination by acting on the skin, and pilocarpin had always been a favorite remedy with him for this reason, as also the hot pack and purgation, with morphia and chloral by rectum. In one case a few years ago the patient developed both mania and convulsions and was in a desperate condition, an intravenous injection of normal saline into the arm had been followed by prompt action of the kidneys and she made an uninterrupted recovery. Dr. England did not think we should look upon any drug as a specific remedy in all cases of eclampsia.

DR. SMITH, in reply, said that he had estimated the amount of albumin by coagulation in a tube, 20 per cent. being the bulk of the whole tube coagulated. With regard to the injection into the breast, he had found that it was apt to be followed by complaints of pain and soreness for some days afterwards, and for this reason preferred the rectal injection. He did not see the necessity of using a binder at all, and often injected opium before using the saline enema in order to help retain it in the bowel. As to what should be the treatment of a case occurring before labour, he had been in the habit of emptying the uterus, but after the successful case just reported, in future he should try the effect of veratrum viride before resorting to this procedure.

Stated Meeting, December 20, 1901.

JAMES PERRIGO, M.D., PRESIDENT, IN THE CHAIR.

Election of Officers for Session 1902.

The following were elected officers for the year 1902 :—

President—Dr. G. E. Armstrong.

Vice-President—Dr. H. S. Birkett.

Secretary—Dr. A. T. Bazin (re-elected).

Treasurer—Dr. J. M. Jack (re-elected).

Trustees—J. Perrigo, F. J. Shepherd and G. A. Brown.

Living Cases—Subastragaloid, Modified Pirogoff and Lisfranc Amputations.

DR. G. E. ARMSTRONG gave the following account of these cases :—

I present here to-night three varieties of amputation. This first patient had both his feet injured in an accident two years ago. I was able to do a Lisfranc operation on the right foot and a modified Pirogoff on the left. He came back now to have a silver wire suture, which had given rise to a sinus, taken out. He says he can walk on the modified Pirogoff with the same ease and comfort with which he does on the Lisfranc. The bony union was perfect. The man has been employed by the railway company since, taking care of lights, signals, etc., and has had to climb a ladder to do this work.

The other patient is an Italian from the Northwest, and met with an accident of which a clear history cannot be obtained, but which resulted in an injury to both feet. He came to hospital with areas of pus distributed over the bones of the foot, so that after consultation it was considered necessary to sacrifice these bones. He had also a long incision on the sole of the foot which interfered somewhat with the formation of flaps. However, I did a subastragaloid amputation, and although only ten days have elapsed, the result so far is very encouraging. It is the first time I have done this operation, but it is one in favour with some of the London surgeons. Its advantage is in giving an increased length of stump together with motion of the ankle joint. The two patients together give a good opportunity of comparing the modified Pirogoff with this operation, and up to the present the result is in favour of the subastragaloid amputation.

Dr. F. R. England asked whether there was not danger of the astragalus slipping out in the subastragaloid amputation and causing trouble. He was under the impression that it was not a safe stump on this account.

Sir William Hingston thought that in amputations of the feet the method was a matter of choice. His own view was if he could get a Lisfranc to do it, but when it came to a Pirogoff he hesitated. But Dr. Armstrong's modification, doing away, as Dr. England had pointed out, with the cicatrix on the pressure surface, may give better results. With regard to the subastragaloid, the time was yet too short to form an opinion, but it was found by experience that the limb is not so serviceable as after a Symes'. The speaker related a case in which the most favourable results had followed à Symes' amputation.

Dr. F. J. Shepherd was very much interested in Dr. Armstrong's subastragaloid, and thought it would be a good operation to do in children. Usually in operations like this the limb was more or less shortened, but here there would not be this tendency. At any rate this would be a good case to keep track of, and in case of trouble the astragalus could be excised, the astragalus having no muscles attached to it, there was no control over it except that the section behind would be pulled up by the tendo Achillis. With regard to the modified Pirogoff, he thought Dr. Watson had performed the same modification as this one years ago. With regard to amputations on the foot in general, the rule is to save all you can and amputate wherever you can.

Dr. Armstrong, in reply to Dr. England, said that he did not fear any displacement of the astragalus, as he thought the attachments on the side would hold the bone in place. He had never read of any cases where the tendo Achillis became attached and turned the stump down. He agreed with Sir William Hingston's favourable opinion of the Lisfranc, but could not quite agree with him in the matter of the modified Pirogoff. This patient had a boot which he wore and all the pressure was on the stump, yet he had many times assured Dr. Armstrong that he could bear pressure on this stump as well as he could on the other foot.

The Treatment of General Septic Peritonitis.

Dr. G. E. Armstrong read a paper with the above title. It will appear in the February number of the Journal.

Dr. E. A. Robertson related the history of an apparent case of general peritonitis in a child aged 4 years. There was severe pain and great abdominal tenderness with distension and rigidity of the abdominal walls. Operation was advised by the consulting surgeon, but the mother would not hear of it, and he had been forced to continue treatment with opium. After about a week the patient was convalescent and the bowels moved freely without the aid of purgatives. It seemed to him that a fatal result from septic peritonitis depended upon the relation between the number and virulence of the septic organisms and the resistance of the patient, and undoubtedly the administration of opium increased the latter factor.

Dr. F. J. Shepherd said it was almost as courageous to use opium now after operations as it was to use purgatives when Lawson Tait first advocated that method of treatment. He was surprised at the meeting of the British Medical Association in Edinburgh to meet a European surgeon who remarked to him that he did not operate, but cured all his cases of appendicitis by opium. Of course Dr. Armstrong's theory is that the source of the infection must be first removed before opium was administered. Dr. Shepherd had had one case where he had cured a man by opium, but not in that way. The patient had a general peritonitis with a very large amount of free pus in the abdomen, a temperature from 103 to 104° F., and he had operated and found the appendix very high up and had had no hopes of the result. The next day the patient was worse, the intestines were so distended it was impossible to keep the sutures in, as the pressure from the distended intestines burst them. He did not die, however, but got worse and worse, and washing out his stomach gave no relief. Finally he said, as he was quite sensible, " Look here, give me a dose of opium and let me die comfortably." He had injected $\frac{3}{4}$ grain of morphia and left the man expecting to find him dead in the morning. During the night, however, his bowels began to act, and he passed a copious amount of material, and recovered. In this case the opium had acted like a purgative.

Dr. Shepherd did not use opium as a rule after operation even if he suspected general or local peritonitis, but was always delighted if he could get the bowels to move, as he had never seen a case that did not do well after the bowels had moved. He could not understand Dr. Armstrong's reasoning when he said he gave opium to reduce the peristalsis and assist the peritonitis. If there was general peritonitis it was all over, and therefore could not be kept localized. At the same time, we were always ready to receive any light on this mooted question, and any method of treatment which seemed favourable, and all were delighted at Dr. Armstrong's enterprise in bringing up the subject.

Sir William Hingston said that as a matter of history it might interest the Society to know that when he first began to practice in

Montreal, over 50 years ago, the treatment of peritonitis with sometimes enormous doses of opium was almost universal. Later on came the time, after Lawson Tait's remarks, when the use of opium was held to be culpable. Sir William said that all his life he had held to the treatment of peritonitis with opium in considerable doses, but not after operation, as there he was a pupil of Lawson Tait.

DR. A. E. GARROW believed that there were many cases of general peritonitis which got well without, or in spite of, any treatment. He thought that in cases of appendicitis one was always in a better condition to deal with the case when opium had not been given before operation. Besides lessening peristalsis, opium in large doses slowed the respiration and rendered it shallow. He had never seen a case of general peritonitis treated successfully by exhibiting opium, but always depended upon free irrigation of the abdominal cavity. It was his custom to irrigate well on both left and right sides, and if possible into the space between the liver and transverse colon with from eight to twelve gallons of hot saline solution, then drain with large drainage tubes and attempt free evacuation of the bowels by calomel and salines, giving strychnine as a stimulant. In two cases in which the calomel and salines failed to secure movements of the bowels within twenty-four hours small doses of atropine were given. A case was related in which the above routine was carried out, followed by atropine, which caused a movement of the bowels, but the vomiting having returned the abdomen was reopened and a twisted knuckle of intestine found. The case recovered. He was not able to explain the action of atropine, but had seen the same thing occur in more than one case.

DR. A. LAPTHORN SMITH said that Dr. Armstrong had raised many points of extreme interest. The great point was whether one should use opium in any form after abdominal section, when it was so necessary to get the bowels to move. He believed that many patients had been killed by overpurgation both before and after operation. After trying both with and without opium it was now his practice to give ¼ grain of morphine before the patient left the table, and another dose if needed the same night or the next night. He also depended upon strychnine, giving it both before and after the operation, continuing its administration for a week. Another point raised by Dr. Armstrong was the action of the diaphragm in absorbing material from the peritonitic fluid. This had been pointed out by Dr. Clark, who was formerly Kelly's assistant at Baltimore, and he advocated raising the foot of the bed after abdominal sections in order to get the peritoneal fluid to gravitate more towards the diaphragm. Dr. Smith held that the action of opium in those cases where it had proved beneficial had been through relaxing the spasm of the bowels through quieting of the reflex excitability of the nervous system. If in washing out the peritoneum one makes a local infection into a general one, washing should not be done and opium is the proper drug to use.

Dr. T. P. Shaw referred to the wide difference of opinion expressed with regard to the use of opium, and thought that the matter could not be decided until we knew exactly what its action on the intestines in these cases was.

Dr. England said that he could not see why Dr. Armstrong should wish to arrest peristalsis in inflammatory conditions of the intestine as the chief object of the treatment was to prevent auto-intoxication, which was certainly favoured by paresis of the bowel, as was witnessed by the result in cases of obstruction of the bowels. Dr Armstrong held that opium overcame the atonic condition of the bowel in the first stage, and helped the bowel to contract, but, on the other hand, if one was unable to overcome this want of tone, a toxic condition would develop apparently from the poison in the bowel itself. He did not quite see how the theory would hold. However opium acted, it was hardly likely that one could attribute its value to the prevention of peristalsis. Dr. Howard Kelly also, who reports six cases of septic peritonitis with five recoveries, considers as of most importance the securing of perfect toilet and good drainage. The speaker said he was in hopes that Dr. Armstrong would have said something about the various infections. It was generally held that if the infection was due to the streptococcus it was likely to end fatally, while if from the staphylococcus or colon bacillus one might hope for more favourable termination.

Dr. Rollo Campbell asked if the hypodermics mentioned by Dr. Armstrong were pure morphine or a combination with atropine, in which case he fancied the good results might have been attributed to the atropine.

Dr. Buller suggested that the exact action of opium upon the intestines might be determined by laboratory experiments upon animals. From the wide difference of opinion expressed regarding the proper drug to use, it would seem that there was no well understood rule with regard to their use.

Dr. Kerry referred to the fact that it was a common demonstration in Germany to open the abdomen of a guinea pig and place it in water, and thus bring on a violent motion of the intestines. In our ordinary practice we used atropine as a laxative, and it has been advocated in large doses in cases of obstruction of the bowels.

Dr. James Stewart was afraid the discussion was tending towards the action of opium and not on the original paper at all. There was no doubt that opium had a stimulating effect upon the splanchnics, while atropine had an opposite effect. He suggested that Dr. Mills might be able to explain the action of these two drugs on the intestines.

Dr. Wesley Mills said that it was so large a subject that he hesitated to enter upon it here. He thought there was an opportunity for some reconciliation between the various views expressed. First of all it was evidently important that the intestine should be cleared out, and therefore he could understand the *rationale* of purgation. But here again purgation had its disadvantages, as while it might remove toxines it had an injurious effect upon the nervous system. Then again he did not see that the cathartic treatment and the opium were necessarily in opposition. In Dr. Shepherd's case there was extreme loss of tone and peristalsis was out of the question, but as the loss of tone was brought about by reflex nervous spasm, as Dr. Smith had suggested, the administering of opium removed this and allowed of the peristalsis being set up. In the case where loss of tone of the bowel was due to toxines allowed to be produced by a spasm of the bowel due to pain, we were simply dealing with pain. Pain itself was depressing, because a vast number of impulses were going in which were unhealthy and consequently the centres were violently affected and the outgoing nerve impulses were disordered. The question of the direct effect of opium upon the intestines was probably only a small part of the problem. If the disease tended to produce a veritable shock, the giving of opium would tend to control the impulses causing this and in a measure prevent shock.

Dr. Armstrong said it would be impossible to reply fully to all the discussion. He had been speaking of a small class of general septic peritonitis cases and not to post-operative cases, in which the principles on which we should act were altogether different, as here peristalsis should be encouraged to prevent the formation of adhesions and the administration of opium added to the danger of obstruction. But supposing that a gastric or typhoid ulcer or an appendix vermiformis perforates, the infection at first was local, and if it could be kept local the results were fairly good, whereas if a purgative were given the peristalsis set up would tend to spread the infection and make it general. As to the purgative action of opium he was unable to speak, there were cases, undoubtedly, where it apparently acted in this manner. An instance of such occurred to him in a patient from whose abdomen he had let out two or three quarts of pus from all over the cavity. After a careful toilet the man had been put on large doses of opium kept up without any laxative and yet the abdomen had distended only an inch or more after the operation, and on the sixth day his bowels moved freely.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,	JAMES STEWART,
A. D. BLACKADER,	J. GEORGE ADAMI,
GEO. E. ARMSTRONG,	G. GORDON CAMPBELL,
WILLIAM GARDNER,	FRANK BULLER,
F. G. FINLEY,	H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON.	T. J. W. BURGESS,	H. S. BIRKETT,
C. F. MARTIN,	J. W. STIRLING,	KENNETH CAMERON,
J. M. ELDER,	F. A. L. LOCKHART,	C. W. WILSON.
D. J. EVANS,	W. F. HAMILTON,	A. G. NICHOLLS,
A. E. GARROW.	E. J. SEMPLE,	W. W. CHIPMAN.

VOL. XXXI. JANUARY, 1902. NO. 1.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The Montreal Medico-Chirurgical with whose proceedings our readers are doubtless well acquainted, enters upon the New Year with bright prospects for increased activity. During the past year it has entered into new and commodious quarters, over the West End Branch of the Bank of Montreal, on the corner of St. Catherine and Mansfield streets; comprising a large meeting hall, comfortably furnished and capable of seating 125 persons, with an adjoining coat room, also a reading room a stock room for the accommodation of the library, and a committee room.

It is the intention of the council to make the rooms an attractive rendezvous for the profession. All the more important medical journals will be kept on fyle, and arrangements are about completed whereby the rooms will be under the charge of an attendant, and open from 2 to 6 p.m., and from, 8 to 11 p.m.

It is also proposed to offer the advantages of the Society to non-resident members at a comparatively nominal fee, who, it is hoped, may be thus induced to contribute occasional papers and join in its discussions. The stated evenings of the Society are held on its 1st and 3rd Fridays of the month, from October to June inclusive.

The office bearers for the present year are as follows:—

Officers.

President—Dr. Geo. E. Armstrong.

Vice-President—Dr. H. S. Birkett.

Treasurer—Dr. J. M. Jack.

Secretary—Dr. Alfred T. Bazin.

Trustees—Drs. G. A. Brown, F. J. Shepherd, Jas. Perrigo.

Committee on Rooms—Drs. J. G. McCarthy, A. Macphail, H. B. Carmichael.

Committee on Library—Drs. F. A. L. Lockhart, F. G. Finley, W. G. M. Byers.

Committee on Programmes—Drs. G. G. Campbell, F. R. England, W. F. Hamilton.

Committee on Admissions—Drs. Jas. Bell, J. M. Elder, W. G. Reilly.

Professor Pestalozza of Florence, on behalf of the Committee of Organization of the Fourth International Congress of Gynæcology, begs to announce to the profession of Canada that the Congress will meet in Rome, from the fifteenth to the twenty-first of September of this year. The committee of organization consists of Professors Pasquali Morosani and Mangiagelli who wish to extend a hearty welcome to their Canadian brethren. The subscription fee is five dollars for gentlemen and two dollars for the ladies accompanying them. The treasurer is Dr. La Torre, 8 Via Venti Septembre, Rome. The subjects chosen for discussion are :

1. The medical indications for the induction of labor.
2. Genital tuberculosis.
3. Hysterectomy in puerperal septicæmia.
4. Inflammatory changes in the neck of the uterus.
5. The surgical treatment of cancer of the uterus.

It is the earnest wish of the committee to have a large attendance of Gynæcologists and Obstetricians from Canada.

Proceedings of the McGill Medical Society of Undergraduates.

Stated Meeting Friday, December 14, 1901.

R. PATTERSON, PRESIDENT, IN THE CHAIR.

The programme for the evening was a discussion of the subject "Can tuberculosis be treated as well in Canada as elsewhere," provided a spirited and well contested debate, the speakers in the affirmative being Messrs. H. Walker and A. Campbell, and in the negative, Ames and Hyatt. The judges for the debate were Professors Adami and Lafleur and Dr. W. F. Hamilton.

Mr. Walker, the first speaker in the affirmative, dealt mainly with the various forms of tuberculosis and the varieties of climatic conditions which we possess in Canada, pointing out how every form could be provided with the climate most advantageous to it.

Mr. Ames on the negative side dealt mainly on the proper prophylaxis and endeavored to point out how painfully behind other nations Canada was in this respect. His speech was well delivered and he made some very telling points.

Mr. A. Campbell, the second speaker in the affirmative, admitted the previous speaker's arguments were most logical and to the point, but showed that the question at issue was not whether other countries had done more for the treatment of the disease, but whether we have in Canada the essentials for this treatment. Those he stated to be (1) a moderately high altitude, (2) a cool dry air, and (3) a minimum of rainy and cloudy days, and went on to show that in Canada we possess these to a degree unapproachable by any other country.

Mr. Hyatt, in the negative, delivered an able speech in which he contended that the climate of Canada was too rigorous for advanced cases of tuberculosis, and even unsuitable for the successful treatment of early cases with a weak constitution. He considered the climatic conditions of Colorado and Switzerland as much preferable.

Mr. Walker was then allowed five minutes in which to sum up the arguments on each side and close the debate, after which the judges retired to consider their decision. During their absence Professor Mills was noticed in the hall, and, in response to the clamors of the audience, the president asked him to make a short speech. This he did in his usual happy manner, urging upon the members of the Society the advisability of establishing a library of their own in connection with it.

The decision rendered by the judges was that in debate and the presentation of their views, the speakers in the negative excelled, but that the speakers in the affirmative maintained their position throughout and won their point.

After the decision was given Dr. Adami expressed his own opinion upon the subject under debate and stated that he considered the climate in the vicinity of Kamloops, B.C., to be the most suitable for the successful treatment of pulmonary tuberculosis. Dr. Hamilton also favored the gathering with a few words on the subject at issue. The meeting closed with a special vote of thanks to the judges for their services upon this occasion.

Stated Meeting, January 10, 1902.

PROFESSOR C. F. MARTIN, HON. PRESIDENT, IN THE CHAIR.

This was the largest and most representative meeting in the history of the society, some 260 members being present to hear an address by Dr. Garrow on Medical Ethics. It is hoped to publish the address, which was a complete thesis on this subject, in full in the next number of the JOURNAL.

Mr. S. B. Thomas, one of the active members of the Medical Society, has been confined to the Montreal General Hospital for the past three weeks, where he has had to undergo an operation for appendicitis. All will be pleased to learn that he expects to be back at work again very shortly.

After a good deal of delay the new reading room of the Undergraduates' Medical Society is now in order. It is a large, well-lighted and well-ventilated room on the first floor of the building. The principal medical and scientific magazines (25 in all) and the leading daily and weekly newspapers of the Dominion, with a few from the United States are to be found on file. The furnishing has been improved by three large oak tables and new chairs have been added. The walls have been adorned and the room rendered interesting to the students by the group pictures of the graduating classes from the year 1880 to the present date arranged in chronological order.

A beautiful tablet erected by the classes of 1901, 02, 03, 04 occupies a conspicuous place in the room, to the memories of Harold L. Borden, B.A., of Canning, N.S., and A. Patrick O'Reilly, B.A., of Hamilton, Ont., who died on active service in South Africa in 1900, occupies a conspicuous place in the room.

It is of interest to note that the growth of the reading room kept pace with the growth of the faculty. The Medical Society was formed in 1879 through the efforts of Drs. Osler and Buller, and shortly afterwards undertook to support a reading room. The first room was a small apartment in the basement of the building and the literature provided was one daily newspaper and the Illustrated London News. In 1885 the room used as the Registrar's office until the present year was fitted up as a students' reading room and the reading matter was considerably increased. In 1886 the faculty were induced to collect a dollar from each student as part of his yearly fees and to devote it to the support of the reading room and since then the finances of the Society have been in a satisfactory condition. When the Molson wing was built in 1894, a reading room was fitted up in the rear of No. 3 Lecture Theatre and the number of periodicals was greatly increased. This room was used until the present year, when the present quarters already described were obtained.

THE EARLY HISTORY AND PROPHYLAXIS OF SYPHILIS.

BY

W. A. GARDNER, '02.

Syphilis, synonymously known as lues venera, morbus gallicus, pox, bad disorder, and by various other terms, is derived from two Greek words meaning swine and love.

This name syphilis by which it is most often recognized in all languages was first employed in 1521, in a poem in which a herdsman named Syphilus is afflicted by some mysterious malady by the god Apollo.

The existence of syphilis in prehistoric ages has been inferred after close study of certain bones exhumed in various parts of the world, exhibiting lesions identical or similar to those found in bones which there is no doubt of the process. Such bones have been found in different parts of the United States, and the lesions have been interpreted by many, as unequivocally due to syphilis. Other views, however, have been taken on this subject and microscopical examination suggests the idea that the changes induced might have been caused by simple inflammation.

In the ancient literature of the Chinese and Japanese, according to some French writers, not only were the initial lesions and their subsequent manifestations appreciated and understood, but the therapeutic value of mercury was fully recognized. A Chinese treatise describes with great minuteness laryngeal symptoms, osteoscopic pains, and condylomata.

Similarly, it is claimed that certain Egyptian and Assyrian inscriptions show clearly that some relation was established between local genital disease resulting from sexual indulgence and lesions observed later upon the trunk limbs and organs of sense.

There is strong reason to believe that reference is made to gonorrhœa in the regulations prescribed by the Levitical Law, but that syphilis was recognized among the Hebrews, is only inferred by some vague phrases; as for example, the strong expressions in which David after the loss of his child bewails the disease of his bones, the loss of his strength, and the cleavage of his tongue to his palate, have been urged in proof of syphilis derived from the woman and the cause of the premature death of the child.

In the literature of the Middle Ages, an oft quoted sentence appears, that the whole body may be infested as the result of lesions in the foul uterus.

If syphilis actually existed previous to the 15th century, it is probable it had not yet attained the virulence and formidable features of a later date.

In 1493, Christopher Columbus returned to Spain from America and some of his company were treated for syphilis by a physician, the symptoms of which first appeared on shipboard. An epidemic of syphilis was reported the following year.

Soon after this the Spaniards and the French troops of Charles VIII. were brought into contact in a war in Italy. The aristocratic officers led the most dissolute of lives, and the rank and file assiduously followed their example.

Now for the first time syphilis was revealed in completeness to the study of medical men. An unmistakable epidemic spread with more or less rapidity, over Italy, France, Spain, Switzerland, and Rhine Provinces.

One view explains the epidemic by an entirely American origin, the other bases its conclusions on the lighting up of previously existing distant germs.

The history of syphilis from the beginning of the 16th century is comparable with that of the advance of all science, in the same time. The evolution of symptoms were soon studied, but the employment of mercury in the management of the disease was not systematized till the beginning of the 18th century. The French were the earliest to win a name in this fruitful field. About the middle of the 19th century, the eminent Ricord first taught the distinctions of the three great periods of the disease, primary, secondary and tertiary.

In Iceland, though syphilis has frequently been introduced it has quickly died away and is there extinct.

In Africa, Livingstone states that syphilis seems incapable of permanence in any form in persons of pure African blood anywhere in the center of the country.

In China the disease is common, but relatively mild among the natives, due, no doubt, to the protection afforded by previous race infection.

In Japan, according to Dr. Eldridge, it is exceptional to meet a man who will not acknowledge that at some time he suffered from syphilis.

Syphilis, though generally venereal, is often acquired innocently. We can have hereditary syphilis, (2) marital syphilis, (3) syphilis sine coitus.

A discussion of these phases is not embraced in this paper, but a few points in connection with each lead us up to the prophylaxis.

Marital syphilis deserves the most careful consideration from everyone who at any time may have syphilitic patients under observation.

Syphilis without coitus deserves the special attention of all, as the dangers extend to everyone, and those dangers are little understood by the profession, to say nothing of the gross ignorance of the laity.

The methods by which non-venereal syphilis may be acquired are innumerable and relate to every circumstance and surrounding of life. The explanation of the greater frequency of venereal syphilis is found in the nature of the virus which requires an abraded surface for its admission. In the genital region the delicate character of the mucous membrane and the frequent abrasions which occur during coitus afford a ready entrance for the poison, further favored by prolonged contact, heat and moisture.

Extragenital chancres are most frequently found on the lips acquired by kissing, on the digital fingers of accoucheurs, on the cheek from razor wounds, on the breast, chin and other places. A curious case is recorded of a young lady who had a chancre on her neck. On close inquiry it was found that a bee had stung her, and a lady friend had licked a piece of court plaster and placed it on the spot. Three weeks after the small point had gradually increased into a chancre.

Another instance is that of a young lady in a coffee tavern who was accustomed to hold coins in her mouth, and developed chancre of the lip. Her lover was found free of syphilis and the recorder states she had not been kissed by another man for months. Ritual circumcision has frequently been followed by innoculation. Dr. Rust in 1805, found a number of children in a Jewish institute with chancre of the penis. He observed that the disease was confined to the male children and that their mothers and attendants were unaffected. He concluded the sores must come from the circumcision act, and watched the man who performed the ceremony; after excision he placed the wounded part in his mouth previous to dusting on a drying powder, and, on examination, his mouth was found full of mucous patches.

From what has been said it is readily understood that syphilis is a disease that inflicts great injury upon the public health, for it imperils not only those who have been guilty of sexual transgression but also those who are quite innocent. Not only does this infection occur in the daily intercourse and occupations of life, but also in the most varied relations, in the care of children, in industrial pursuits and in professional callings. Syphilis from marriage, or marital syphilis, stands prominent in the innocent acquiring of the disease. While men occasionally acquire it in lawful wedlock it is principally the wives who suffer from the sins of their husbands, before or after marriage, and on them falls a large share of the burden of innocent syphilis. Fournier, the great French authority, concludes that fully twenty-five per cent. of all females affected with syphilis acquired it honestly in lawful wedlock relations, and among the married females in his private practice in seventy-five per cent. the disease was unmistakably traced to the husband.

Surely then there is something in the plea that some measures should be taken to prevent the wholesale infection of those innocent victims of marital syphilis. But if this aspect of the subject seems dark, that of hereditary syphilis is yet darker and calls even more strenuously for relief.

The following is taken from the records of births of syphilitic children at the Moscow Hospital from 1860-1870. During those years there were 2,002 births and 1,425 deaths, or seventy-one per cent. of the children born there of syphilitic parents, died.

If, however, the effects of the disease were limited only to the destruction in the newborn or in the products of conception, there would be strong reasons for the introduction of measures to check the spread of the disease, from its loss to the State, but this is only a portion of the ills wrought in connection with generation, and it would be better if all syphilitic children should thus fail of life, than be born with an inheritance which so often proves such a curse.

The case of a man is quoted, who, in early life, had severe syphilis destroying his palate, of whose nine children two were idiots, two deaf and dumb, and two died in infancy.

Thus the army of innocents swells in size and pleads for the restriction of the disease, which, it is now believed, may sometimes be inherited to the third generation, and we know that it has at times decimated our Indian tribes and wrought unspeakable havoc in Russia, in the Hawaiian Islands, and elsewhere. The individual with syphilis, is not only likely to communicate the disease in marriage relations, but is also likely to transmit the taint to the offspring. He is likewise a constant menace to society by virtue of the contagious character of the disease. Fully one-tenth of the cases reported at skin clinics are of syphilitic origin.

It is a disease worthy of the most serious consideration by the physician and sanitarian. It stands second to none in pathological importance. The fact that in so large a proportion of cases it happens to be communicated through sexual contact and in no great share of these from unchaste venereal relations, by no means warrants its relegation to a class of affections the very mention of which is to be tabooed in good society.

Prophylaxis relates to the individual protection of the individual and to public measures or the legal control of syphilis.

Individual safety will result from a better and more widespread knowledge on the part of the profession and the laity, of the manifestations of syphilis, its dangers, and the modes by which the disease has been transmitted.

The following is taken from Dr. Osler:—

Irregular intercourse has existed from the beginning of recorded history, and unless man's nature wholly changes (and of this we can have no hope)—will continue.

Resisting all attempts at solution, the social evil remains the great blot upon our civilization and inextricably blended with it, is the question of the prevention of syphilis.

Personal purity is the prophylaxis which we, as physicians, are especially bound to advocate. Continence may be a hard condition, to some harder than others, but it can be borne, and it is our duty to urge this lesson upon young and old who seek our advice in matters sexual. Certainly, it is better, as St. Paul says, to marry than to burn, but if the former is not feasible, there are other altars than those of

Venus upon which a young man may light fires. He may practice at least two of the five means by which, as a physician Roundibilis counselled Panurge, carnal concupiscence may be culled and quelled—hard work of body and hard work of mind.

Idleness is the mother of lechery, and a young man will find that absorption in any pursuit will do much to cool passions which though natural and proper, cannot in the exigencies of our civilization always obtain natural and proper gratification."

Dr. Gowers says regarding the prevention of syphilis:—

"One means and one alone remains, old as the malady itself, by which it can be prevented. One method and one alone is possible, is sure, and that one is open to all. It is the certain prevention secured by unbroken chastity. The opinions that on pseudopsychological grounds suggest or permit unchastity, are absolutely false. Trace them to their ultimate basis and they are groundless. They rest only on sensory illusions,one of the many illustrations of a maxim I have often to impress on various sufferers.

There are no liars like our own sensations; rather I should say they rest on misinterpretation of these always biased and often deliberate. With all the force that any knowledge I possess, and any authority I have, can give. I assert that no man ever yet was in the slightest degree or way the worse for continence or better for incontinence.

From the latter all are worse morally, a clear majority are worse physically, and in no small number the result is, and ever will be, utter physical shipwreck on one of the many rocks, sharp, jagged-edged, which beset the way, or on one of the many banks of festering slime which no care can possibly avoid."

The second question relates to the regulation of prostitution. Quoting again from Osler:—

"The State accepts the responsibility of guarding citizens against smallpox or cholera, but, in dealing with syphilis, the problem has been too complex and has hitherto baffled solution. On the one hand, inspection, segregation, and regulation are difficult if not impossible to carry out: on the other hand, public sentiment in Anglo-Saxon communities at least is, as yet, bitterly opposed to this plan. While this feeling, though unreasonable, as I think, is entitled to consideration, the choice lies between two evils,—licensing even imperfectly carried out or widespread disease and misery.

If the offender bore the cross alone, I would say forbear; but the physician behind the scenes knows that in countless instances, syphilis has wrought havoc among innocent mothers and helpless infants often entailing lifelong suffering. It is for them he advocates protective measures."

Occasionally severely radical measures have been proposed as by Dr. C. F. French, who would stamp out syphilis by extirpating in those affected, the sexual organs.

A committee from the American Public Health Association, proposed that a law should be enacted making it a criminal offence to knowingly communicate directly or indirectly venereal disease..

Dr. Bellem declares that inspection, examination and enforced hospitalization are the only means of preventing the propagation of syphilis. He would have an inspection not alone of prostitutes, but of all soldiers, sailors, police, workmen in factories, and of all the ships entering a port.

Physicians shall denounce to the police those whose faces indicate taint. Men and women shall denounce those who gave them the disease. No person shall marry without presenting a certificate that they are free of syphilis. To have syphilis is a misfortune, not a crime. To knowingly transmit it is a criminal act against humanity.

Registration and inspection have been practiced in France and in Russia to a considerable extent.

Bartholemy argues that no one is under any legal obligation to be a prostitute, but if any one has the right of disposing of her body as she pleases, it is necessary that this merchandise like any other, should not damage the consumer nor constitute for him a cheat nor peril.

The law, he shows, regulating prostitution in France, has utterly failed to accomplish the ends that were intended. One hundred thousand women in Paris live by prostitution, and of these only four thousand are registered. French authorities acknowledge that registration and inspection have not reduced the percentage of syphilitics.

In St. Petersburg, the law regulating prostitution, as in Paris, has failed to accomplish its purpose.

In England in 1864, Contagious Disease Acts were passed with the object of reducing syphilis in the army and navy. These acts were a combination of hygienic surveillance of prostitutes and hospital accommodation for their treatment. In 1881, Clifford Albutt said that syphilis under these acts, according to statistics, had actually increased and that they were mischievous, degrading and thoroughly one-sided. They were afterwards repealed.

Such measures having failed in consideration of the difficulty of the problem of how to check the spread of this disease, are we to follow the maxim of the market place and merely say to the purchaser, *caveat* *emptor*; and if the conditions of society are such that the struggle for existence obliges many women to dispose of the use of their bodies to any purchaser, then let the buyer beware ?

Is there no obligation that society should protect him, and is there no evidence that the injury he does or may do to innocent persons should demand legislative action looking toward securing such protection ?

The most comprehensive legislation may not suppress all syphilis even as laws against theft do not stop all thieving, but it may do much to control it.

Many have recognized the one-sided feature of dealing with the women alone, and would have the matron examine all men entering a house of prostitution, while others advocate that all patrons of these houses should be supplied with cards certifying to their sanitary condition, to be presented to the woman when they examine the last inspection date on her card.

One man suffering from this disease aptly expressed the unscrupulous opinion of many so afflicted when he said "I will pay them back, it is their business to chance and risk pox, as it is the soldier's to risk bullets."

Such legislation would undoubtedly increase clandestine venery and so defeat its own object.

The difficulties of the problem can be imagined from the statement that typhoid fever and tuberculosis can be and may be more easily prevented than syphilis, dependent as the latter is upon so many as well as such uncontrollable factors, some of which include the human characteristics of the want or frailty of the woman, the viciousness of the man.

St. Augustine has said that if prostitution were suppressed, society would be inflicted by libertinisms.

However difficult and complex the problem may be, certainly one of the first means that should be adopted to decrease syphilis is the general regulation by all hospitals to admit free all syphilitics that apply for treatment.

It would be, according to Morrow, impossible to estimate how much these institutions have done to increase the prevalence of the disease by refusing admission to such patients. Special wards should be assigned in all general hospitals. Dr. Bulkley, in an essay on syphilis, would have it considered from a broader and higher standpoint than that of a venereal disease, namely, from that of defending the public health and that of individuals against a malady that afflicts the innocent and guilty alike.

The first question is not one of "regulating prostitution or inspecting, licensing, or legalizing the social evil," but the prevention of the unnecessary extension of a disease which produces a vast amount of sickness, misery and death.

The amount of damage a single unrestricted individual can do, may be judged from the statement of a St. Petersburg physician,—a syphilitic woman who came under his observation had succeeded in contaminating three hundred within a period of ten months. This represents merely the primary transmission of the disease; its later effects on others can hardly be computed.

The first step towards accomplishing the legal control of syphilis would undoubtedly be found in placing it among other contagious diseases which come under the jurisdiction of the health officers. Such precautions are exercised against smallpox, diphtheria and yellow fever; is it not eminently proper that syphilis should be placed in the same category ? Syphilis counts its victims by thousands where other diseases count hundreds.

More deaths are ultimately caused by syphilis than by smallpox, while the injury to health and interference to life work is much greater in the former than in the latter.

The conclusion is absolute, syphilis should be placed like other contagious diseases under the control of the health authorities.

THE CHARITY BALL.

On the last night of the year the Medical building was invaded by an overwhelming host of the laity, come to dance the New Year in for the sake of Charity — the new Maternity Hospital. The affair was a memorable one and a distinct success.

The numbers present were such that the capacity of the halls was taxed to the utmost, and outside the "Ladies' Cloak Room" into which the Library had been converted for the evening, the crush was such that it boded imminent danger to the ladies' dresses, while just beyond lay the whole expanse of the ground floor spread with inviting chairs and gorgeous rugs, and unoccupied. From above it was a very pretty sight, a crowded mass of unusually brilliant colour, with the black of the men winding in and out.

Meanwhile, three dances had been played away by the orchestra in the Crow's Nest gallery, and enjoyed by only a few wise heads. Finally, however, the crowd below wound slowly upward to the Anatomical

Museum which had deteriorated into a "Ball Room," while the antechamber to the Sanctum Sanctorum Facultatis, of all dignified places in the world, had descended to the unfathomable depths of a "Ping-Pong" establablishment.

The dancing began in earnest. The music had its usual effect and the dancers were soon racing around and again around, regardless of everyone and everything but themselves (and charity?). The usual varieties were all represented; the daring man whirled his partner recklessly in the most thickly populated spots in the room, mowing his way at first by the centrifugal effects he produced and later by the panic created by his approach. Cautious dancers were there hugging the outskirts of the room and invariably colliding with door handles and radiators,— in short, there was every variety, truly an apt illustration of antagonistic atomic movement in a heated body. From the picturesque point of view of an absolutely cool non-participant, however, the scene was ideal.

But not all of those assembled danced. No. III. lecture theatre, with all due respect and thanks to the Professor of Chemistry for the practiced and experienced manner in which he fascinated girls and men with the X-rays, was never more popular, than when it had relapsed into utter darkness, and the bump of locality and investigating powers developed by some were truly remarkable, even the pit leading into the pharmacological laboratory being discovered and occupied.

It was a glorious ball, a pleasure to witness, a keener pleasure to participate in, but the crowning success and the part least likely to be forgotten, was the realization of nearly two thousand dollars for the new Maternity Hospital.

PRIZE ESSAY FOR THE ERECTION OF A SANATORIUM, IN ENGLAND, FOR TUBERCULOSIS.

His Majesty the King has graciously consented to direct that the expenditure of a large sum of money which has been placed at his disposal for charitable or utilitarian purposes, shall be devoted to the erection in England of a Sanitorium for tuberculous patients.

His Majesty has appointed the following gentlemen as an Advisory Committee for this purpose:

Sir William Broadbent, Bart., K.C.V.O.
Sir Richard Douglas Powell, Bart., K.C.V.O.
Sir Francis Laking, K.C.V.O.
Sir Felix Semon.
Sir Hermann Weber.
Dr. C. Theodore Williams.

It is intended to construct the Sanatorium on the best lines which past experience and original thought can suggest, and in order to obtain the most valuable opinion His Majesty has been pleased to approve that a sum of £800 be awarded in prizes for the best essays and plans which may be sent in to the Advisory Committee, under the following conditions :

1. Medical men of all nationalities may compete. The papers may either be the work of a medical man, or the joint production of a medical man and an architect.

2. The Sanatorium is intended for 100 tuberculous patients—50 male and 50 female.

3. Of the total number of beds, 88 will be assigned to the more necessitous cases, whilst 12 will be reserved for the well-to-do.

4. The accommodation for all patients is to be comfortable, a separate room being provided for each. Superior arrangements to be made for the more wealthy patients.

5. It may be taken for granted that the Sanatorium will be erected on an elevated and sloping site with a sunny exposure and well sheltered from cold winds. It will have a farm at a convenient distance. and be surrounded by extensive grounds, well wooded, and affording ample space for exercises of various kinds. The soil will be dry and permeable, and the water supply abundant.

6. The Sanatorium must be fitted with the latest sanitary arrangements, and equipped with all requirements for scientific research. Provision should also be made for the recreation of the patients.

7. Economy in construction will be an important consideration, but it must not interfere with the reasonable comfort of the patients or the efficiency of the institution.

8. The essays must be in English and type-written.

9. The essays must not bear the name or names of their authors, but should have a motto, and each essay should be accompanied by a sealed envelope bearing the motto on the outside and containing the full name and address of the author or authors inside.

10. All essays and plans must be sent postage paid, on or before the 15th April, 1902, to one of the secretaries, Dr. P. Horton-Smith, 15 Upper Brook St., London, W.; Dr. John Broadbent, 35 Seymour St., London, W.

11. Three money prizes of £500, £200 and £100 respectively will be awarded in order of merit on the recommendation of the Advisory Committee for the three best essays, provided that they come up to the requisite standard of excellence. Brevity will be an important consideration, and a summary of the main features of the scheme should be appended to the paper. Unsuccessful papers will be returned to the authors.

THE

MONTREAL MEDICAL JOURNAL.

Vol. XXXI. FEBRUARY, 1902. No. 2.

Original Communications.

INTERMITTENT CLAUDICATION.

BY

William Osler, M.D., F.R.S.,

Professor of Medicine, Johns Hopkins University.

In 1877 or 1878, when studying comparative pathology, I went one day to the country with some of the members of the Montreal Veterinary College to see an autopsy on a horse which had had a peculiar form of intermittent lameness. Dr. McEachran said the condition was well recognized, and had been described by the French writers, but it was very obscure. I have forgotten now the details of the autopsy, except that we found verminous aneurisms of many of the mesenteric vessels and of the iliac arteries. At the time I was much interested, and looked up Bouley's paper on *Claudication Intermittente.* He described an affection in the horse, in which, after being driven for fifteen or twenty minutes, the animal stopped, one or both of the hind legs got stiff, and soon it was unable to stir. In from half an hour to an hour it recovered and was able to go on comfortably for another fifteen minutes, when the attack recurred. In such cases, post-mortem, the artery of the affected limb was found blocked with a clot, or, when both hind legs have been involved, the abdominal aorta contained thrombi.

The subject was not brought to my attention again until a few years ago, when working at the subject of angina pectoris. I then looked up Charcot's description of this intermittent claudication in man, and made also the interesting discovery that Allan Burns in his *Observations on Some of the Most Frequent and Important Diseases of the Heart, 1809,* had given an explanation of this remarkable phenomenon.

One or two of his sentences I may quote: "In health, when we excite the muscular system to more energetic action than usual, we increase the circulation in every part, so that to support this increased action the heart and every other part has its power augmented. If, however, we call into vigorous action a limb round which we have with a moderate degree of tightness applied a ligature, we find that then the member can only support its action for a very short time, for now its supply of energy and its expenditure do not balance each other; consequently, it soon, from a deficiency of nervous influence and arterial blood, fails and sinks into a state of quiescence." He puts it very tersely when he says, "the supply of energy and expenditure do not balance each other."

Charcot was the first to describe a condition in man identical with that met with in the horse. His Memoir was presented to the *Société de Biologie* in 1856, and is also to be found in the *Leçons du Mardi, I.* One day a patient in the service told him that he was not able to walk for more than a quarter of an hour without being taken with cramps in the legs. After resting a while he would get better, and would be able to resume his walking, and then a crisis recurred. At the autopsy Charcot found a ball encysted in the neighbourhood of the iliac artery, and a traumatic aneurysm which had obliterated the artery in its lower part. The circulation was carried on by collateral channels, which were ample to maintain the nutrition while the patient was quiet, and for a short period during exertion, but after a time, when the limbs were fatigued by the movements, the quantity of blood which reached them was insufficient, causing a relative ischæmia, with tingling, cramps, and impossibility of walking. He refers to the fact that the condition is often preliminary to gangrene, and narrates a case in which a patient with the affection had his leg amputated for gangrene.

Interest has been reawakened in the subject by the very careful studies of Erb (Deutsche Zeitschrift für Nervenheilkunde, 13), in which he has reported twelve cases, and has called attention particularly to its association with arterio-sclerosis and calcification of the arteries of the legs. The whole subject, too, has been reviewed this year (1901) by Goldflam in the *Neurologisches Centralblatt*, and in this country cases have been reported by Gordon (New York Medical Journal, 1900), and by Riesman (American Medicine, 1901).

Familiar as I had been for years with the disease in the horse and with the early literature on the subject in Burns' work and with Charcot's description, I had never recognized the condition clinically until in the patients whose histories I here give.

Case I. *Vomiting and pain in abdomen—Pulsating tumor in epigastric region—History of syphilis—General arterio-sclerosis—Wiring and electrolysis of aneurismal sac—Marked improvement—Return in nine months with well marked intermittent claudication.**

W. B., aged 31, from Virginia, came first to the hospital in December, 1899, complaining of vomiting and great pain in the upper abdomen. These symptoms had been present for several months. He had lost in weight and had become very nervous. He had been a healthy fellow, but had had syphilis six or seven years before. The radials were sclerotic, the aortic second sound ringing and accentuated, and in the epigastric region there was a wide area of impulse; on palpation an expansile tumor which could be easily grasped in the hand. I urged him to have the sac wired. To this he consented and went home to settle his affairs. He returned early in January, and Dr. Finnie opened the abdomen and found an aneurism of the abdominal aorta, into which he inserted ten feet of wire, through which he passed an electric current for an hour. The patient did well and returned to his home very greatly benefited, particularly in the relief of the pain. He returned in October, 1900, for examination. He had continued free from pain and vomiting. His general condition was excellent, though he was still nervous and apprehensive. The sac was decidedly smaller and the area of pulsation much less.

He volunteered the statement that there was an additional symptom which had disturbed him not a little; namely, after walking for a certain distance his legs would, as he expressed it, give out completely; so that he could not move another step, and had to sit down. After resting a few minutes he could then go on again. This was more particularly noticeable when he walked on the street. He had to go very slowly and could not go for any distance. There was no paralysis accompanying the loss of ability to walk. He could move his legs, but there was an uncontrollable feeling that he could not take another step. Accompanying this there was a sensation of dead, heavy weight in the legs, but no cramps. Walking about in the house (and in the yard) did not bring on the condition, but he had had it very frequently in the past few months, and he had learned to ward it off by walking very cautiously and slowly and resting at intervals. The femoral arteries and the dorsal arteries of the feet were distinctly sclerotic.

---

* As I look over this paper for the press this patient has been readmitted to the hospital (January, 1902). He has remained very well since the operation two years years ago. The aneurism can be felt. It is hard and firm. He has no pain, but is still very neurasthenic. He has not had the intermittent claudication for nearly a year.

In aneurism of the abdominal aorta the condition is the same as that which produces the intermittent claudication in the horse, and one can readily understand how, as Allan Burns expressed it, the supply of energy and expenditure did not balance each other. In fact, it is surprising that lameness is not more common in such cases.

The following case is a typical illustration of the more frequent cause; namely, general arterio-sclerosis. The patient had, moreover, the associated vaso-motor and nervous disturbances which are not uncommon with disease of the arteries of the extremities.

Case II. *Mitral stenosis—General arterio-sclerosis—Attacks of intermittent lameness with numbness and tingling in the feet and marked vaso-motor disturbances—Absence of pulsation in the dorsal arteries of the feet.*

Mrs. W., aged 55, admited June 7th, 1900, complaining of pains in the right leg, difficulty in walking, and heart trouble. There was nothing of any special moment in her family history. Her mother died of tuberculosis, and probably one sister. She had had the usual diseases of childhood, and had acute articular rheumatism at sixteen. She had had seven children and five miscarriages. The last child was born seven years ago. She had always enjoyed good health, and had had no serious illnesses. She said, however, that she had had heart trouble all her life, and occasional attacks of shortness of breath.

Present Illness. While at Baden last August she went out for a walk after eating a very hearty dinner, and after going a little distance from the hotel she lost control of her legs. There was no pain, but they simply refused to carry her, and she had to be carried back to the hotel. There was no loss of consciousness. She was very much alarmed about herself, and she was given aromatic spirits of ammonia, which made her very nauseated, and a little while later she vomited. The following day she felt well enough to leave Baden. Prior to this time she had begun to suffer a good deal with dyspnœa on exertion. She stood the journey back to this country very well, and remained quite well until about six weeks ago. Walking rapidly one day to the boat at Norfolk, she got somewhat out of breath. She got on the boat all right, and felt quite well until she reached Fortress Monroe, when she found on attempting to get up she was unable to walk. She had at this time a feeling of pins and needles in her feet, chiefly in the right foot. There was no difference in the color, and no swelling. About three weeks ago it was noticed for the first time that the right foot and leg were slightly blue, and she has had a good deal of pain in this foot and leg, sometimes sufficient to require morphia. For the greater part of the time since the attack she has been in bed. On attempting to move about the legs give way. The pain in the right leg is much intensified if the foot hangs down. She has been very much worried and disturbed about herself, but her general health has been pretty good. She does not think she has been more short of breath of late. She has had a little palpitation and pain about the heart. The dyspnœa is altogether on exertion.

Present Condition. The patient was a medium sized woman, quite stout and looked nervous. The tongue was clean. She gave a very good account of her history and condition. The radial pulse was regular, 96, vessel wall not sclerotic. No sclerosis of the temporal arteries. The pupils were equal, and reacted to light and on accommodation.

Heart. Point of maximum impulse was visible in the fifth interspace about the nipple line. There was an exaggerated systolic impulse on palpation; no definite thrill. On auscultation there was an extremely sharp, flapping first sound at the apex, almost amphoric in tone, and preceded by a short, rumbling murmur. There was a soft systolic bruit at the aortic area, and the second pulmonic sound was loudly accentuated.

The abdomen was not swollen; liver and spleen not enlarged.

Legs. Both could be moved freely in bed. Power of movement of right toes and ankle slightly impaired. The right leg looked cyanosed from the knee down. There was no œdema. It was extremely tender to the touch. The right calf measured the same as the left—31½ cm. Left leg and foot normal in size and color, and not tender to the touch. Both feet felt cold, the right more so than the left, and she complained very much of the numbness in them. There was no pulsation to be felt in the dorsal artery of the right foot, nor in the right popliteal artery. Slight pulsation to be felt in the femoral artery. No pulsation in the dorsalis pedis or popliteal arteries of the left leg. Pulsation in the left femoral was well felt. Pulsation in the external iliacs could be just felt. There were no patellar reflexes in either leg, and the plantar reflexes were very difficult to obtain as she winced so much from tenderness of the soles.

The patient had warmth applied to the legs, careful friction, and she did remarkably well. On the 11th there was no cyanosis in either the leg or foot. It was still cooler to the touch and tender. No pulsation could be felt in the femoral artery.

I heard subsequently from this patient's daughter that she died a month or two after leaving the hospital.

This case illustrated the good effects of careful treatment as recommended by Erb. With rest in bed, warmth to the legs and careful friction she improved very much. She received great benefit too from the use of full doses of nitroglycerine.

A word as to the name. I think it is very much better to use the term intermittent claudication, though it does not specify the etiology. It expresses well the most characteristic feature of the complaint. Erb's term, *intermittirendes Hinken,* is simply the German equivalent. Other terms have been used, such as *angio-sclerotic intermittent dysbasia* by Charcot, *intermittent muscle paresis* by Erb, and *angio-sclerotic paroxysmal myasthenia* by Higier, the author of a long article on this subject in *Deutsche Zeitschrift für Nervenheilkunde,* July, 1901. As shown in the horse and in the first case which I here report, the affection is not always due to simple arterio-sclerosis, but may be due to aneurism, as in Charcot's case and as in the rule in the horse. Oppenheim has reported instances in nervous individuals in which the condition seems to depend upon vaso-motor disturbances.

THE TREATMENT OF GENERAL SEPTIC PERITONITIS.*

BY

G. E. Armstrong, M.D.,

Associate Professor of Clinical Medicine, McGill University, Surgeon to the Montreal General Hospital.

The great mortality of general septic peritonitis is a sufficient reason for an occasional review of our knowledge of its pathogenesis and pathology; and our lack of success in its treatment a sufficient stimulus to effort looking toward improvement of our therapeutic resources.

Let us for the purpose of facilitating the discussion this evening, define general septic peritonitis as a septic inflammation of that portion of the visceral and parietal peritoneum occupying the pelvic and small intestine area. I would thus limit the area, because at the operating table one may generally form a moderately accurate estimate of the condition of this region. It is seldom that the operator can say very definitely much about that part lying above the transverse colon. It is desirable also to eliminate from this discussion all side issues and complications, important as they are. General peritonitis, unfortunately, is only too frequently associated with other equally grave pathological lesions. These complicating conditions contribute in no small degree, when present, to the fatal ending by their influence upon the patient, and by lessening the efficiency of the therapeutic measures employed. They are, notably, advanced renal disease and insufficiency, septic pleurisy, pneumonia, pulmonary emphysema and cardiac lesions. It is desirable also to eliminate from the discussion cases of general peritonitis advanced to a stage in which profound toxæmia and collapse indicate that the conditions rendering cure possible have passed away.

Treves puts the mortality of general septic peritonitis at 70 per cent. Abbe, in his article in the International Surgery, estimates the mortality by cases treated medically at 90 per cent., and in over 200 cases treated surgically within the last few years, at 60 per cent. Senn, in his recently published work on Practical Surgery, says, "I have drained and washed out the peritoneal cavity in many cases of diffuse septic peritonitis and I am free to confess without a single successful result. All my cases have died of sepsis a few hours to a day or two after the operation, in spite of heroic stimulation and in some cases of frequently repeated irrigation with sterilized water, normal saline solution, or mild antiseptic solutions, such as boric acid and acetate of aluminum." McCosh states in the *Annals of Surgery*, Vol. 1., 1897, that he has operated "on 43 cases of general septic peritonitis. Of these 37 have died and 6 have recovered, a mortality of about 86 per cent." These references are sufficient evidences, if such were needed, of the tremendous mortality of general septic peritonitis under present methods of treatment.

---

* Read before the Montreal Medico-Chirurgical Society, December 20, 1902.

Of its pathogenesis and pathology we know something but not too much. It is conceded that septic peritonitis results from septic infection by various pathogenic organisms of various degrees of virulence. It is also conceded that the sum total of effect is in some degree dependent upon the resisting and reparative power of the patient, and of the therapeutic measures adopted; and here one must call a halt. The nature of the poisons produced, their method of production, their path of entrance into the system, and their neutralization and elimination, are, for the most part, not yet definitely determined. We cannot as yet just say what is the effect of these germs and their toxines upon the different coats of the intestine. Nor do we know definitely to what extent the intestinal distention and paresis is due to pressure from within the lumen of the gut, or to the paralysing effect of poisons upon Auerbach's plexus, or to their degenerating influence upon the muscular coats. Here, indeed, it seems to me, is a great field for research work, rich in possibilities, in which the pathologist, bacteriologist, and chemist might work together with mutual advantage.

The symptomatology is tolerably well understood; the prognosis is certainly bad. Can we adopt a more effective method of handling this disease? The advantages of a prompt recognition of the condition and the institution of appropriate treatment at the earliest possible moment are evident to all. The wisdom of removing the cause, when possible, is hardly open to question. If seen early, this may be done with the thoroughness, permitted and facilitated by general anæsthesia. In advanced cases, however, I am convinced that the administration of a general anæsthetic is harmful and sometimes hastens the end. In such cases one can only make a small opening for drainage with the aid of a local anæsthetic. Through this opening a quantity of foul-smelling, septic, sero-perulent discharge escapes, and an imperfect but helpful lavage may be performed.

It is to the after treatment especially that I desire to direct your attention.

Given a condition of ingravescent or already generally diffused peritonitis, in a patient whose respiratory, circulatory, and other excretory and eliminative organs are normal and may be relied upon to perform more than their normal share of work, what resources give the greatest promise of success? It matters not whether the peritonitis has resulted from a ruptured gangrenous appendix, a perforated typhoid or other ulcer, or a strangulated hernia, the principles involved in the after treatment are much the same if the inflammation is more than local and further spreading in not prevented by limiting adhesions.

The indications are to arrest the spread of the infection and inflammation by continuity of tissue, to lessen the production of toxines, to favour the elimination of the poison already generated, and to aid the natural recuperative powers. These indications, I think, are best met by arrest of peristalsis and by adapting such means as favour rapid elimination of the toxines.

I have been like some others, perhaps, very much influenced by the teachings of that surgical genius, the late Mr. Lawson Tait. I faithfully withheld opium and as faithfully endeavoured to secure free movements of the bowels, thinking that by so doing I prevented the formation of adhesions that might become obstructive, and that I stimulated the elimination, through the intestinal wall, of toxines. Experience has convinced me that this is a wrong principle upon which to act. I have seen too many peritonitis cases gradually sink and die from toxæmia, while at the same time passing several, loose, watery, diarrhœa stools daily. Those stools were the result of the administration of various enemata and of salines by the mouth. Disheartened by these results, I began adopting an almost opposite course in the after treatment of peritonitis cases. It is quite possible that in his special work Mr. Tait was quite right in his methods. His work was largely gynæcological, a class of work in which there is comparatively little sepsis and that of a mild degree of virulence. I am of opinion, however, that his principles applied to ingravescent and general septic peritonitis, such as comes before the general surgeon, are too often followed by disastrous results to be adopted. I believe better results are to be obtained by arresting peristalsis and endeavouring to promote toxine elimination by channels other than the intestinal tube.

The plan which I have successfully adopted in a few cases, too few I admit to prove anything conclusively, is to arrest peristalsis and promote the elimination of the poisons by:—

(1) Stomach lavage. This may be carried out with the aid of a ltttle cocaine spray in the pharynx; or, if an anæsthetic is adminis-

tered, I have the stomach washed out before the patient leaves the operating table, and while yet somewhat under the influence of the anæsthetic. It gives relief in the lessening of vomiting. If the contents of the upper bowel are regurgitating into the stomach, the lavage may be repeated one or more times. By emptying the stomach it also promotes better breathing and lessens peristalsis.

(2) The withholding of all food from the stomach and the substitution of rectal feeding. The withholding of food not only lessens vomiting, but also lessens peristalsis.

(3) The administration of opium, generally in the form of hypodermic injections of morphine. I wish it to be understood that my advocacy of opium refers exclusively to its use in the after-treatment of cases of peritonitis, after the initial lesion or cause has received attention. Its use before operation is, in my opinion, to be strongly condemned, as also its use with a view to the doing away of the necessity for operation.

After the cause of the peritonitis has been considered and dealt with so far as possible, then opium may be, I think, administered with benefit. As you are all aware, the practice of administering opium in peritonitis is not new. Before as much was known of the disease, especially concerning its causes, as we now know, the most successful was the opium treatment. The knowledge of its usefulness was of gradual growth, until, finally, Professor Alonzo Clark grasped the idea of its therapeutic value and popularized its use. Just how opium does good is not easily told. It is clearly known that patients suffering from peritonitis have an increased tolerance of opium. The late Austin Flint, in his Practice of Medicine, published in 1873, tells of a case of peritonitis under the care of Prof. Clark in which huge doses of opium were administered with impunity and apparent benefit. The patient took the first 26 hours a quantity of opium and morphine equivalent to 106 grains of opium, in the second 24 hours she took 472 grains, on the third day 236 grains, on the fourth day 120 grains, on the fifth day 64 grains, on the sixth day 22 grains, on the seventh day 8 grains, after which the treatment was suspended. This patient, Professor Clark had reason to believe, "was not accustomed to the use of opium in health and was not intemperate." Why this lessened susceptibility to opium I do not know unless it is antidotal to some poison present in the system.

I believe one advantage gained by the exhibition of opium is its influence in lessening peristalsis, and that the lessening or arrest of peristalsis lessens the spread of infection, lessens the production of toxines, and increases the formation of limiting adhesions. These are all important points. The arrest of the spread of the disease is tantamount to the lessening of the toxine production. Ochsner thinks that he arrests peristalsis by withholding food by the mouth and the substitution of rectal feeding. Possibly this is true; probably it is partially true.

But, if I mistake not, opium has other and quite different effects. Abbe suggests that by relieving pain it permits freer movement of the diaphragm, which is known physiologically to be one of the most potent factors in the causation of the flow of lymph, and hence of the absorption of fluids from the peritoneal cavity. That the peritoneum has great powers of absorption is well known. The observations of von Recklinghausen concerning the remarkable powers of taking up fluids and solid particles in suspension possessed by the central tendon of the diaphragm, have been confirmed by Ludwig, Schweigger-Seidel and Wegner. Auspitz has observed finely-divided rice meal pass through the central tendon, and an hour later has found it in the blood of the ear, and some hours later in the lung, liver, spleen, and kidney. Muscatello, Maffuci, and Beck have shown experimentally that substances are rapidly taken up from the peritoneal cavity through the central tendon, and that they then pass on through the thoracic duct into the vena innominata. It seems also to be established that other portions of the peritoneum absorb, although less rapidly. In particular may be mentioned the great omentum, the gastro-hepatic and gastro-colic omenta, and the mesorectum. For many of these facts I am indebted to Byron Robinson's work on The Peritoneum.

Abbe, then, has good reason to think that the freer action of the diaphragm stimulates lymphatic absorption in the great lymph sac, the peritoneum. It is quite possible, may I even say probable, that the longer excursion of the diaphragm exercises an equally important influence on the vascular system of the abdominal cavity. Practically the greater bulk of the blood from the abdomen enters the inferior vena cava through the portal system and liver. A freer action of the diaphragm causes greater pressure upon the liver, thus aiding in the propulsion of the blood through its cells. The diaphragm is thus made to do duty alternately as a force and suction pump, and its influence upon the blood and lymph channels must be great. Certainly the respiratory system can no longer claim a monopoly of the diaphragm.

The results of this action of the diaphragm in promoting and accelerating the circulation through the blood and lymph vessels is to lessen congestion in the affected area and to stimulate absorption of the products of inflammation. These products of inflammation must, therefore, be conveyed almost directly by both sets of vessels to the lungs. If the result is beneficial to the patient, then we may assume that in the lungs and in the other excretory organs the poisons produced in the peritoneal cavity are successfully eliminated.

I think it was John Hunter who said, "Don't think, try it." I have tried it in the following cases, which I shall report very briefly:

Case I. There was admitted to my ward in the Montreal General Hospital in 1899, a young man, 25 years of age, in a collapsed condition. He was vomiting and had a distended abdomen. His respiration was rapid, his pulse 140. He had been treated for appendicitis, and perforation was said to have occurred fifteen hours before admission. I felt that the administration of an anæsthetic would in all probability prove fatal, and that it would be unwise to attempt any operative interference. I decided, however, to make a small incision in the median line with the aid of cocaine. This was done and a considerable quantity of sero-purulent fluid escaped. The soft rubber tube of an irrigator was inserted through the wound and the lower abdomen and pelvis washed out as well as possible with normal saline solution. He was then given hypodermics of morphine, gr. $\frac{1}{4}$, about every four hours. The next day he had a rigor and developed a scarlatiniform rash. He was isolated; desquamation occurred at the usual time, and he made a good recovery. He returned some months later and his appendix was removed by one of my colleagues. The man is now, I believe, in good health.

Whether or not the scarlatina influenced favourably the subsequent course of the peritonitis I am unable to say. I may say, however, that some years after this I operated very rapidly on a child about six years of age that was suffering from peritonitis, the result of perforative peritonitis. The next day the temperature rose to 106° F., and all the symptoms of scarlatina developed. This child also recovered. In this connection I may also say that I have used antistreptococcic serum without any apparent benefit.

Case II. My second case was a little girl, aged 6 years, admitted on 21st January, 1900, suffering from perforated appendix and general peritonitis with abdominal distension. The temperature was 102 1-5° F., pulse 144, respiration 40. An anæsthetic was administered, the appendix removed, and the abdomen washed out with normal saline solution. This child was given hypodermically 1/32 grain of morphine on an average every six hours for nine days. She recovered slowly. After leaving the hospital the child gained strength, got fat and strong, and seemed for months to be quite well. She afterwards died rather suddenly of what was probably an acute obstruction. I did not see her during the last illness and no autopsy was performed, but, from what the attending physician told me, I have little doubt that the cause of death was ileus.

Case III. F. L., aged 10 years, was admitted on the 23rd March, 1900, with general peritonitis resulting from a perforative appendicitis. Temperature 103 4-5°, pulse 160, respirations 44. In this case opium was administered without apparent benefit. The temperature gradually rose to 105 4-5°, and she died eight hours later. In this case it is possible that if I had been satisfied with a small incision under cocaine, instead of a more perfect cleansing of the abdominal cavity under a general anæsthetic, the results might have been different.

Case IV. J. E., aged 14, was admitted on the 2nd November, 1900, suffering from general peritonitis from perforation of appendix, and in a condition of collapse. An incision was made under cocaine, and death occurred ten hours later. Opium in this case had apparently no beneficial effect, except to relieve pain and it gave mental rest and quiet.

Case V. P. F., aged 9 years. General peritonitis had occurred from perforation of the appendix. Temperature 100 4-5°, pulse 134, respiration 42. Operation performed under ether anæsthesia, appendix removed and small intestine area cleaned with swabs and normal saline solution. Morphine was given hypodermically every three hours during the first three days. The dose was alternately 1-16 and 1-8 of a grain, and during the following three days about 1-8 grain was given every eight hours, when it was stopped altogether. The abdomen was soft, free from tenderness, the bowels had moved freely and nourishment was taken in considerable quantity by the mouth and well borne. The child was bright, played with books and talked of going home. On the evening of the sixth day the child vomited and complained of severe headache. It gradually became comatose, developed strabismus, and died apparently of acute meningitis. The abdomen remained soft and free from tenderness. So far as could be discovered, death was not due to any abdominal condition. Death occurred forty-eight hours after the onset of the head symptoms.

Case VI. J. J., aged 23 years, was admitted to hospital at 5 a.m., on 16th November, 1900, suffering from general peritonitis from acute perforative appendicitis. The temperature on admission was 97° F., pulse 100, respirations 24. Operation was performed under ether anæsthesia eight hours later, the temperature being then

100 3-5° pulse 124, respirations 32. This man received 1-4 grain of morphine every four hours for five days, then 1-16 grain for one day, when it was stopped. He made a perfect recovery.

Case VII. W. D. A., aged 26 years, was admitted 2nd September, 1901, with general peritonitis from a perforated appendix. The pelvis and small intestine area contained quantities of sero-pus giving mixed bacilli on culture. There was acute inflammation and thickening of a portion of the omentum. On admission the temperature was 101 1-5° F., pulse 100, respirations 20. For two days he received morphine grain 1-4 every twelve hours, and one dose on the third day and one on the fourth. A moderately severe attack of bronchopneumonia developed, but he made an excellent recovery.

Case VIII. M. J., aged 20 years, was admitted on the 18th September, 1901, with general septic peritonitis from a perforated and gangrenous appendix. There were areas of superficial sloughing over the base of the cæcum, and the abdomen and pelvis were filled with a large quantity of greenish pus. On admission the temperature was 99°, the pulse 100, and the respirations 28. Operation was performed about four hours after perforation had occurred. Pus from the abdomen was found to contain apparently a pure culture of the colon bacillus. Stomach lavage was performed while on the operating table and he was given, during the 48 hours immediately subsequent to operation, 1-4 grain of morphine every four hours. On the third day he received only 1-4 grain of morphine, and the same on the fourth. He made a most satisfactory recovery.

I have given only a brief outline of these cases. The toilet in all of them was as thorough as circumstances permitted. They were given little or nothing by the mouth and were fed at regular intervals by nutrient enemata.

I do not claim that any of these cases that recovered would have died if morphine had not been administered. These cases, however, eight in number, were of that class that give a high rate of mortality; yet of the eight, five recovered and three died, a mortality of 37½ per cent. I am of the opinion that without the aid of morphine the death rate would have been larger. I think we would do well to use morphine more than has been the custom of late years.

The points in treatment that I wish to emphasize are:—

A careful selection of cases for operation under general anæsthesia and a more frequent employment of local anæsthetics.

Exclusively rectal feeding, and

A judicious use of morphine after operation, or after symptoms of perforation of appendix, typhoid or gastric ulcer, while preparations for operative relief are being carried out. In some of these cases it would almost appear that opium acted as an antidote to the poison developed in general septic peritonitis. The evidence of this action are the increased tolerance, and the fact that in some of these cases the bowels moved freely on the fifth or sixth day without the administration of any other medicine.

GENERAL GONORRHŒAL INFECTION WITH ILLUSTRATIVE CASES.*

BY

W. F. HAMILTON, M.D.,
Lecturer in Medicine, McGill University; Assistant Physician, Royal Victoria Hospital, Montreal.

During the last ten or twelve years much time has been devoted to the study of the gonococcus and to gonorrhœa, and, from the consideration of a local infection with its acute manifestations and more chronic results and complications of a local character, attention has been turned to the general infection with its manifestations even yet more important, and in many instances quite as permanent. Scarcely more than two years ago the subject of gonorrhœa was before this society for discussion. It was dealt with from the surgeon's standpoint, acute and chronic urethritis with its local complications; from the standpoint of the obstetrician, from the ophthalmologist's standpoint, and from the standpoint of a yet more generalized infection, when a comprehensive review of forty-eight cases of gonorrhœal arthritis was presented from the records of the Royal Victoria Hospital. The discussion two years ago had the result of quickening the writer's interest in this subject and since that day clinical observations have been carefully made upon several patients thus affected. It is a matter of regret that cultures of the blood were not made at the same time that cultures of the fluid effused into the serous and synovial sacs were being tried. The cases reported in these notes are chosen from among those not included in previous reports.

General gonorrhœal infection takes place in a large majority of cases from the male urethra, and from metastases secondary thereto and yet localized, as in the prostate. There remains yet a difference of opinion upon the occurrence of gonorrhœal vaginitis, not a few claiming that it is exceedingly rare; while all agree that the cervix, the urethra, and Bartholini's glands are favorite parts for early infection in the female. As in the male a general invasion may follow almost immediately upon the primary infection, but it would appear that widespread infection *i.e.*, general, is not so common as in the male. It may be that a greater resistance is offered to the general extension of the infection in the uterus, adnexa and pelvic peritoneum, thus protecting the female against a general infection or gonorrhœal septicæmia or toxæmia.

---

* Read before the Montreal Medico-Chirurgical Society, Jan. 17, 1902.

While the uro-genital tract is primarily infected in the great majority of cases it is now well recognized that a generalized infection may follow gonorrhœal ophthalmia. Poncet, in 1881, observed two attacks of arthritis follow inoculation of the conjunctiva for the cure of granular ophthalmia. Joint affections secondary to purulent ophthalmia in infancy and childhood have been reported in considerable numbers since 1885. Twenty-three such cases have been collected, eighteen of which were in the new-born, while five were found in older children. It was noticed in several cases belonging to the former class that ophthalmia developed upon the third day and was followed by arthritis in from the second to the third week. According to the conclusions based upon three series of cases reported by Besnier and Julien, Gresolle and Gricolle, a generalized gonorrhœal infection results in from 1.5 to 2.8 per cent. of cases; while from a review of the literature upon the complications of gonorrhœa, it appears that from the skin to the endocardium no tissue of the body enjoys immunity.

The surgeon has to deal chiefly with the acute local disorder, then with periurethral abscess, prostatitis, urethral stricture, cystitis, pyelitis, surgical kidney, not to mention lymphangitis and adenitis. The gynæcologist sees the infection manifest in vaginitis, cystitis, adenitis, salpingitis, and peritonitis. The obstetrician finds abortions and post partem septicæmias following as a result. To the ophthalmologist, conjunctivitis, iritis and optic neuritis appear in the wake of such an invasion; while the general physician deals with arthritis, pleurisy, endocarditis, etc. Dermatologists have been pleased to attribute to a general gonorrhœal septicæmia certain erythematous and hæmorrhagic eruptions. The neurologist finds an occasional explanation for sciatica, multiple neuritis, meningo-myelitis, and meningitis, in previous gonorrhœal infection; while the muscles and bones, with no clinical aspirant to mark them out as his special study, are frequently the seat of intense pain though but rarely of the products of visible inflammation. Yet, as Ullmann has recently shown, gonorrhœal osteomyelitis must be recognized ; and the combined evidence of Eichhorst, Treves, Ware and others, upon gonorrhœal myositis must be regarded as conclusive. With this evidence before us of such widespread infection, we turn to the pathologist for an explanation of these complications which in the degree of severity and frequency scarcely take second place to those of typhoid fever. We are told that there may be :—

(1) A direct infection with the gonococcus itself,

(2) A toxin—the gonotoxin,

(3) A mixed infection of gonococci and other pyogenic organisms, to account for the symptoms and results.

With respect to the first, direct simple infection with the gonococcus, it may be said that, owing to the many unsuccessful attempts to demonstrate the organisms either in the blood or in the exudate in the affected joint or pleura, it remained for some time a matter of doubt as to their relations to the pathological changes. However, with improved methods and more suitable media, there is now sufficient evidence to show that gonococci circulate in the blood. Since 1898, Panichi, Ghon and Schlagenhaufer, and Thayer and Blumer have found gonococci in cultures taken from the blood, and in some cases after death in the heart lesions.

The second part of the pathologist's answer points out a factor in the pathology of the disease which plays an important, if not the most important, part in the production of the general symptoms. On good authority it is stated that "this irritating toxin produced by the gonococcus in the process of its growth in the human body is the direct cause of all the symptoms of the disease" (referring to the generalized infection). This statement is based upon experiments made upon animals with the toxins which resulted in local and general reactions characterized by inflammations, malaise, rise of temperature, and loss of weight. There is an interesting theory concerning the action of the toxin, which may be briefly set forth here. Podrez in 1885, and Drobney in 1898, observed that those cases of gonorrhœa in which the gonococci were within the white cells or pus cells, ran a milder course than when the organism was free. It is claimed, partly on this ground, that the toxin inhibits phagocytic action and thus affords an opportunity for widespread invasion. This view finds further support in the experiments of Christmas, by which he showed that the gonococcus when injected into human beings and guinea pigs died within forty-eight hours.

Concerning a mixed infection with pyogenic organisms, it may be said that, as attempts to produce abscesses by inoculations of gonococcus cultures were unsuccessful, it was thought that pus was rarely if ever produced by this organism alone, and thus when so found in gonorrhœa it was concluded that pyogenic organisms must have produced it. Up to 1893 this view obtained more generally than at present, for since the work of Lang and Paltauf in 1893, and Bujivid in 1895, Jundell in 1897, and Young since that date, pyogenic properties have been ascribed with good reason to the gonococcus.

The following cases have served as interesting clinical studies from time to time during the past two years, and illustrate many of the features which characterize the course of a general gonorrhœal infection.

Case I. Male, aged 23, was admitted complaining of "rheumatism." He had been in good health up to six months before admission, when he became infected in the urethra. Three weeks after infection he developed pains in the right ankle, which, becoming swollen and hot has been permanently affected. Shortly after, the right knee became involved, and a few days later the right shoulder. One month later almost all the joints of the body were attacked including the temporo-maxillary and the sterno-clavicular articulations. Thereafter his condition remained about the same throughout the six months, at times better and then again much worse. About the same time that the joints became affected, both eyes became red, painful, and lachrymose, and a purulent discharge, sealing the lids together in the morning, was present.

In the past history of this patient there is no evidence of rheumatism of chorea, nor of previous venereal affection.

The condition, on admission, was one of extreme emaciation, the extremities showing a most marked atrophy of muscles, making the joints appear abnormally large. There was partial ankylosis of the jaw, with tenderness and swelling over the sterno- and acromio-clavicular joints. Some of the smaller joints of the hands were swollen and tender. The vertebral articulations were painful on movement. The right eye was free, while the left eye showed an iritis.

Urine. There was urgency and frequency with pus on examination. An examination under ether resulted in the diagnosis of vesiculitis, cystitis, and posterior urethritis.

The patient had no other complications, and under treatment,—both local and general, made satisfactory progress, gaining upwards of twelve pounds in two weeks. Throughout his stay in the hospital, which extended over eight weeks, his temperature was rarely above normal.

This case presents the features of general gonorrhœal infection as manifest in polyarthritis, in which the smaller as well as the larger joints were involved, and in which, too, those joints more rarely infected were involved, such as the temporo-maxillary, sterno- and acromio-clavicular. It shows as well, early iritis with conjunctivitis recurring throughout the course of the disease.

Case II. C., male, aged 33. This patient also complained of "rheumatism." However, this resolved itself into more definite complaints of pain and stiffness between the shoulders, in the lumbar region and in the heels and neck. In his personal as well as in his family history acute inflammatory rheumatism was frequently found. He had two attacks of inflammatory rheumatism previous to 1894, when he was first infected in the urethra. After this his left knee was inflamed and swollen. In 1897 a similar attack of urethritis was followed by another arthritic attack, when the left knee and the shoulder and the back were involved. In 1899 he had another rheumatic attack. In 1901 a third attack of "rheumatism" was largely confined to the back, left knee and heels, and remained very obstinate in the back, heels, in the lumbar region, the neck and both shoulders. In his attack of rheumatism in 1894 he had iritis of the right eye.

While a man of 33, his appearance was that of a man of many years older. He was stooped and quite unable to take an erect posture and walked limpingly through the wards. He had signs of aortic endocarditis (regurgitant). Under treatment in the hospital he improved considerably, was somewhat less troubled with pain, and increased in weight. His temperature was subnormal throughout a stay of two and a half months.

The chief interest in this case lies in the fact that with fresh gonorrhœal infection in a rheumatic subject, the arthritic manifestations were present, while the fascial involvements were most marked.

Case III. B., aged 31, male. He became the subject of urethritis about July 1, 1901, and about six weeks after he was the subject of severe pain about the hips and of weakness. He was in the hospital for about three weeks in September and was somewhat improved, but on going out he became rapidly worse. The hips, the left knee, and the ball of the right foot were painful, and there was considerable soreness in the calf muscles. He was readmitted towards the end of September in this condition, but still afebrile. About two weeks after admission the back of his neck became painful and his left knee was swollen and tender with considerable distension of the synovial sac. At this time, for about five days, the course of the temperature was irregular with excursions from 97° to 99 1-5° and once to 100° F. Thereafter it remained normal throughout a subsequent stay of five weeks in the hospital. The knee joint was aspirated and cultures made by Dr. Bruere of the clear fluid withdrawn, with negative results.

This patient illustrates, among other points in this disease, how slight may be the febrile disturbance even in the presence of active synovial inflammation. Of the frequent negative findings in cultures made from joints affected in gonorrhœal infection, one also finds an example here.

Case IV. B., aged 21, male, showed signs of arthritis on November 17, 1899, about two and a half weeks after urethral infection. He had never had acute rheumatism. Sketching the course of this patient's disease as briefly as possible, it may be said that he was the subject of a polyarthritis showing involvement of the larger as well as the smaller joints, *e.g.*, wrists, knees, shoulders and smaller joints of the hands. He had suffered conjunctivitis and iritis of the right eye followed by iritis of the left. His temperature curve was irregular, but during the height of joint manifestations it rarely reached a point above 100° F.; occasionally 101°, once 102 3-5°, is the maximum.

Ten days after admission the heart sounds, which up to this time were clear and distinct and without murmurs, became somewhat changed in the muffling of the first sound and a slight accentuation of the pulmonary second. Then an apical systolic murmur was heard, indefinite in character, but after the lapse of a few more days with definiteness. Simultaneously with the alteration of the sound and the development of the murmur, the accentuation of the pulmonary second sound became more pronounced. These symptoms, together with a slight cardiac enlargement, persisted throughout.

Each knee joint became distended with fluid and was aspirated, several cubic centimetres of somewhat turbid fluid being withdrawn from each. Cultures were made by Dr. Bruere which, with the exception of the staphylococcus epidermidis albus in one culture, were negative.

This case showed such a chronicity and intractableness that one was tempted to experiment with antistreptococcic serum, on the supposition that mixed infection was aggravating the condition, and so three such injections of 10 cc. each were given. Whether any good effect can be ascribed to this treatment or not must remain an open question, yet the temperature showed a much more regular course even after the first injection, and after the third settled to about an average of 99 2-5° F. with signs of improvement about the joints.

Polyarthritis, conjunctivitis and iritis, with mitral endocarditis following so closely upon a urethral infection, clearly mark this as a case of generalized gonorrhœal infection.

Case V. F. L., aged 34, male. Eight weeks after urethral infection and after exposure to cold, this patient became afflicted with inflammation of the right ankle, the left thumb joints, the left wrist, the right knee, and the eyes became inflamed. On admission to the hospital his temperature was about 101°, his left wrist and right knee and both ankles were greatly swollen and very tender, with almost complete limitation of movement in these joints, while deep inspiration constantly aggravated the pain felt over the posterior portion of the left lung. On physical examination there was some evidence of left-sided pleurisy.

His stay in the hospital, which extended over thirteen weeks, was marked by temperature curve rarely above 100°, persistent pain for many weeks in the left arm and shoulder (over the left scapula), with tenderness in the muscles and marked wasting, so that by actual measurement the left arm was from 1 to 1 1-8 inches smaller than the right. Conjunctivitis recurred frequently throughout his stay in the hospital. No definite areas of induration occurred in the muscles indicating myositis, and it seemed to us who saw much of this patient that the atrophy was not unlike that following neuritis. It may have been, in part at least, due to the disuse, incident to the arthritis of that side.

Case VI. L. H., aged 24, female, was admitted complaining of a amenorrhœa for two months, with pain in the pelvic region and some morning sickness, headache and nervousness. She had occasional "cramps" in the stomach, and sneezing or coughing was painful. She had never had rheumatism or chorea. Admitted on the 7th, she aborted on the 10th of March. The discharge from the genital tract showed diplococci characteristic of gonococcus. On the third day after the abortion she began to complain of pain in the right shoulder and the right side of the chest. The temperature, which on admission was subnormal, rose gradually on the second and third days to 99°, and on the third and fourth days abruptly to 102°, when it fell again to subnormal. Emaciation was rapid, sweating was profuse and irregular in its occurrence, sometimes in the morning, sometimes in the afternoon, and sometimes in the early evening. There were no chills. A careful examination of the pelvic viscera revealed no evidence of retained products of conception, of abscess, or of widespread cellulitis.

Her case was regarded as one of generalized gonorrhœal infection and from the course of her illness this diagnosis was amply confirmed. She had signs of pleurisy in both right and left sides. From the right side on April 5th a small quantity of blood-stained fluid was withdrawn, and on the 11th yet more fluid was withdrawn from the same side, clear in character.

There were recurring and most distressing symptoms giving evidence of peritonitis, *e.g.*, severe abdominal pain and vomiting, dorsal decubitus with knees drawn up and extremely rigid abdominal walls, pinched countenance and thready pulse.

On the 7th of May, a mild attack of arthritis began; the left shoulder and elbow became painful and somewhat hot; on the morning of the 8th pain was felt in the left ankle; on the 9th, pain in the right wrist, and in the metacarpo-phalangeal joints, in both shoulders, in the left ankle, and in the outer side of the right knee. On this day also numerous red papules were observed on the hands and arms. On the 14th the temperature, which during this period had averaged about 99 1-5°, dropped to 97°, and thereafter remained afebrile. The arthritis subsided and gave but slight reminders of its presence during the next two weeks, when the patient was discharged, after a three months stay in the hospital.

If this case-picture has been faithfuly drawn, you will have seen already how à double pleurisy and recurring peritonitis, with profound constitutional symptoms, followed by polyarthritis, enter into and give it its prevailing color.

Of the six cases there were five men and one woman. The generalized infection became manifest in from three to ten weeks after the primary invasion by way of the genito-urinary tract. The complication of endocarditis occurred in one case, peritonitis in one case, pleurisy in two cases, iritis in two cases, and double conjunctivitis in three cases. A neuritis of the nerves supplying the muscles about the left shoulder and upper arm seems probable in one case; while the joints were involved in all the cases.

The treatment in all these cases, in addition to meeting the indications for the relief of pain, has been both local and general. Already, when the patients came under our care, the toxæmia was established, and the chief indications for treatment were to lessen the toxæmia and increase the patient's resisting power. To carry out the first indication attention was given to the urethra and vagina, in the use of mild irrigations and injections. In the case of vesiculitis, cystitis, and posterior urethritis, massage of the prostate, lavage of the bladder, and urethra with boracic acid solution, and post-urethral injections of solutions of nitrate of silver. In the case last reported hot vaginal douches were given for several days.

Elimination was aided by hot air in its effects upon the skin, while occasional mercurial or saline purgatives were administered.

To increase the patient's resisting power, good food was supplied. Most of these cases were on the full diet or restricted diet with extras of milk and eggs.

On purely theoretical grounds, some claim for quinine a large place in the treatment of this affection; but while it has been used in a few cases, nothing can be said definitely concerning it beyond the fact that as a bitter tonic it stimulates the appetite and thus increases the resistance of the patient, through increase of food taken and assimilated.

The chief indication, however, when once the toxæmia is established is to lessen the toxæmia by every possible means. The irrigation of accessible involved mucous tracts or surfaces, and, in severe cases, the opening of joints and all metastatic areas and cleansing them by the same processes, seems rational and has been very effectual in many cases.

In closing I must express my indebtedness to Dr. Bruere for cultures, and to Drs. Turnbull, Ballantyne and Goodall for watchfulness and care in observing these cases and keeping the hospital records.

BIBLIOGRAPHY.

Allbutt—System of Medicine, Vol. III.
Christmas—*Ann. de l'Inst. Pasteur*, No. 8, 1897.
Cushing—*Johns Hopkins Hos. Bull.*, May, 1899.
Ghon and Schlagenhaufer—*Wien Klin. Woch.*, No. 24, 1898.
Jacinsky—*Jour. of Amer. Med. Assoc.*, February, 1899.
Moynihan—*Lancet*, London, November, 1900.
MacDonell—*Amer. Jour. of Med. Sci.*, Vol. CI., pp. 1, 1891.
Thayer and Lazear—*Jour. of Exp. Med.*, January, 1899.
Stewart—MONT. MEDICAL JOUR., Vol. 29, pp. 174.
Ullmann—*Deut. Archiv. f. Klin. Med.*, Vol. 69, pp. 309.
Ward—*Brit. Med. Jour.*, Vol. I, 1901.
Ware—*Amer. Jour. Med. Sciences*, Vol. CXXII., pp. 40.
Young—*Johns Hospkins Hos. Reports*, Vol. IX.

PICTOU CATTLE DISEASE.*

BY

J. G. ADAMI, M.A., M.D.

In the summers of the years 1894-95 I was deputed by the Minister of Agriculture to investigate the remarkable localized zootic affecting more especially cattle in a limited area of the north of Nova Scotia, extending, roughly, from Pictou on the west to Antigonish on the east, known as *Pictou Cattle Disease.* The results of my investigation were published with some little detail in the Report to the Minister for the year 1895. I further communicated a description of my findings to the pathological section of the British Medical Association at its meeting in Montreal in 1897, of which brief abstracts appeared in the *British Medical Journal* and the *Lancet* of that year. Owing, however, to the loss of certain notes, and more especially to the difficulty I found in devising a method for demonstrating in the tissues the bacteria described by me,† I have not so far published the whole results of my research, nor have I ever regarded it as being definitely concluded. Add to this that I could not feel that my discoveries adequately explained all the features of this peculiar disease.

The main effect in the organs occurring in this disease as shown at post mortem, is the development of an extreme condition of cirrhosis of the liver; that is to say, of replacement of large portions of the liver tissue by fibrous connective tissue. My findings led me to observe whether anything similar was to be made out in connection with cirrhosis of the liver in man, and since 1895 I have, when the opportunity occurred, carefully examined into the bacteriology and the microscopical appearances in connection with this latter state.

The results of my observations and those of workers in my laboratories upon the same subject have been published in a series of papers in the MONTREAL MEDICAL JOURNAL, *The British Medical Journal*, the *Lancet*, the *Journal of Experimental Medicine* and the *Journal of Hygiene*, etc. I have been led by these observations to study a much wider field, namely, that of the presence of bacteria in the organs of the body in general, more especially of bacteria derived from the intestines. As these observations have materially modified my views with regard to the nature of Pictou Cattle Disease, it is but right that I should here briefly refer to them and note other observations which have been made more directly in connection with the disease in question.

---

* By the kind permission of the Hon. Mr. Fisher, Minister of Agriculture, this abstract from the Annual Report of the Pathologist to the Agricultural Department is here printed in advance of the publication of the Report of the Department for the year 1901.

† Or more correctly for gaining a permanent stain, so that I could forward the specimens to pathologists at a distance.—J. G. A.

It will, in the first place, be necessary to say a few words with regard to the leading features of Pictou Cattle Disease, and this more particularly because I learn that the edition of the Report to the Minister for 1895 is completely exhausted. Pictou Cattle Disease is only found in Canada in a district spread along the northern coast of the Nova Scotia peninsula, a tract of country extending about 40 miles along that coast and stretching from 5 to 12 miles inland. In this district it has been noted for some forty years, now at one end of the area, now at the other. Cattle are in the main affected, but cases are on record in which sheep and even horses have shewn symptoms of the disease. The disease would seem to be very chronic and all the cattle upon a farm are not affected simultaneously, but it has been generally found that in the course of three or four years most of the cattle of a given herd will, one after the other, be affected. It would not seem that the disease spreads directly from animal to animal for there appears to be no special incidence of the cases following upon the long winter sojourn of the animals in the byres. The gradual extension of the disease from farm to farm through any given district, seemed also to some extent to be related to the fact that each farm had at the back a piece of woodland into which the cattle roam during the summer. These belts are badly fenced off from each other and the animals when seriously diseased, are liable to wander off into the woodland and there die in hiding. This, together with the fact that one or two cases are on record in which the disease has broken out in a neighbourhood after the body of a cow affected with the disease had been washed down one of the streams and stranded upon the farm lands, appeared to give some considerable support to the conclusion that the disease was of infectious origin. Indeed, for a time the Government Regulations which demanded the destruction of the diseased animal and the burning of the carcase or burying it in quicklime, seemed to have a deterrent effect upon the spread of the disease. During the first few years in which these regulations were carried out the number of cases occurring annually sank from 150 to under 30.

Of late years, since 1898, despite these regulations, the disease has become somewhat more frequent, so that doubts are naturally being cast upon this theory of the infectious origin of the disease.

With regard to the symptoms, the first to be noticed is that the milk acquires a peculiar bitter taste and has a distinctly acrid odor upon boiling; following upon this, within a few days, the animal becomes dry, is found to be weak and restless, the coat stares, the limbs are dragged, the bowels loose, some swelling of the abdomen is recognizable, the eyes project and are staring, and the conjunctivæ of the eyes have a slightly yellowish tinge. This weakness deepens and in general the animal dies in a condition of complete muscular weakness and exhaustion, but in some few cases the symptoms are more acute and death is preceded by a period of intense excitement, almost maniacal in character, the animal rushing about blindly charging various obstacles, and after a few hours falls into a condition of exhaustion or paralysis followed rapidly by death.

During the two years that I examined this district I made post mortem examinations upon some thirty animals, the majority of which I killed in the advanced stage of the disease, and I found, as Dr. Osler and Dr. Wyatt Johnston had previously noted, that the main lesion is an extreme condition of cirrhosis, the fibrous tissue not only being along the vessels between the lobules (periportal), but extending in between the individual cells, the organ being enlarged somewhat and having a smooth or finely granular surface more rarely. In addition I noted the abundant production of thin bile, and almost without exception, the gall bladder was found very full and the fæces well stained. The lymphatic glands at the root of the liver and the abdominal lymphatic glands were in general large and succulent, and there was a moderate amount of ascites and the fluid in the abdominal cavity was, however, particularly clear and limpid. With this there was a remarkable condition of gelatinous œdema of the mesenteries and walls of the intestines so that these walls were much thickened. A further constant lesion was the presence of numerous follicular ulcers in the fourth or the true stomach. These, save in very acute cases, were found to be in a cicatrized condition giving strongly the impression that the earliest lesions in the case were gastric and that the disturbance of the abdominal lymphatic system and in the liver was secondary to this. The spleen was large but not markedly so. As noted first by Dr. Wyatt Johnston in the cases killed apparently in the early stages of the disease, the most noticeable features in the liver are the fatty degeneration of the liver cells together with great congestion of the vessels of the liver. This stage appears to give place to a rapid destruction of many of the liver cells and replacement of the same by delicate new connective tissue and which still remains very vascular and also contains abundant lymph channels and lymph spaces, for almost without exception abundant thin fluid made its way into a canula or pipette when this was pushed into the liver substance.

Dr. Wyatt Johnston and I also, by employing the more usual method of trying to obtain cultures of bacteria by means of sterilized platinum needles, gained negative results, but when, instead of making the inoculations upon the spot, I employed a series of sterilized glass pipettes in which I collected relatively large amounts of the juice of the various organs, ascitic fluid, blood, etc., I then, after some hours inoculated this juice upon various media, and was able constantly from the lymph of the abdominal glands and from the liver juice, and more rarely from other organs and fluid, to obtain in each case growths of what seemed to be a characteristic micro-organism. These growths in general developed slowly, often not being present until the end of 48 hours at the body temperature, and in each case they showed themselves to be a small polymorphous organism at times appearing as a diplococcus, at other times as a stumpy bacillus or diplobacillus. This, by its polymorphous character, gave me a considerable amount of trouble, until I noted that in the earlier stages of growth the diplococcus form was the more frequent, but later this gave place to a more bacillary form. The constance with which I found this organism in the liver and in the abdominal lymphatic glands seemed in itself at that time to indicate very clearly that this bore some relationship to the disease, more especially when, as I have already mentioned, I obtained this organism from the bodies of animals which I had myself killed and had immediately proceeded to examine. This microbe proved itself to be pathogenic for rabbits, guinea-pigs and mice, the rabbits dying in some 15 to 25 days, and the guinea-pigs in from 30 to 35 days as a general rule. As I pointed out in my previous report, I was, however, unable in these inoculations to produce a condition of cirrhosis in the animals inoculated with a pure culture and to this extent the organism did not fulfil Koch's postulates, and it was left open whether this truly had been the cause of the disease. I should add further that upon examining the sections of the liver which had been stained by particular methods, I was eventually able to recognize similar little diplococcoid bodies in abundance in the liver cells, and in great abundance also in the abdominal lymphatic glands, and in the liver these were mainly within the cells. When I inoculated rabbits with the pure cultures I obtained the same intracellular appearance of minute diplococci.

From these observations it would seem clear that the development of the Pictou Cattle Disease is but slow and that there is extensive involvement of the liver before any of the symptoms show themselves. Our experience with the development of fibrous connective tissue in man indicates that this is a matter of weeks and months rather than of days.

Shortly after my return from Pictou the first case of human cirrhosis which came to post mortem presented a condition which resembled greatly those seen in the Pictou Cattle Disease. The fibrous change in the liver, it is true, was further advanced, and the liver was small and hobnailed in appearance, but there was the same enlargement of the mesenteric and retroperitoneal lymph glands and those at the hilus of the liver, and the same curious gelatinous œdema of the mesenteries and walls of the intestines, a change which had not been noted in connection with this condition in man, although since then I have frequently found it present. This has led me during the last two years to study the bacteriology of human cirrhosis.

More than one form of human cirrhosis is recognized, 1st, the so-called hypertrophic biliary cirrhosis of Hanot, which has for long been regarded by Hanot and the French school in general as of infective origin, brought about by the inflammation of the bile ducts. 2nd. by far the most common form is the atrophic or portal cirrhosis, in which the new fibrous tissue is laid down primarily it would seem along the sheaths of the branches of the portal vein within the organ. This form most commonly occurs in those giving an alcoholic history so that alcohol has long been regarded as the main cause, indeed, the condition has been known as the "gin-drinker's liver." But now those who have studied the subject are practically agreed that while alcohol may be and probably is an exciting cause, it is not the essential cause. Many cases are on record in which no alcohol has been taken, and again feeding animals with alcohol, in the great majority of cases leads to no cirrhosis, while thirdly, a systematic examination of the livers of confirmed drunkards, shows that cirrhosis is the exception rather than the rule; the fatty liver is the common alcoholic condition.

On the other hand there are definite indications of infective or bacillary disturbances in connection with cirrhosis. The ascites which is so common in this condition is not pure but shows evidence of a combined inflammatory disturbance with the development of adhesions and frequent evidence of inflammation around the liver with adhesions to the diaphragm, while in quite a large proportion of cases we obtain a history of a right-sided pleurisy which points to an extension of the inflammation through the diaphragm to the overlying pleura.

In this very first case, above mentioned, studied by me, I obtained evidences of bacteria similar to those of Pictou Cattle Disease, but owing to the fewness of cases presenting, to the great difficulty of staining sections aright, and, I must add, to my own failure to recognize the true relationships of the forms I isolated, it was not until 1898 that I published upon the subject, first in the MONTREAL MEDICAL JOURNAL, July, and next in a paper read for me by Professor Osler at the Edinburgh meeting of the British Medical Association (*The Lancet*, Aug. 13, 1898, p. 376), announcing the existence of a micro-organism in association with progressive portal cirrhosis as similar to that found by me in connection with Pictou Cattle Disease. This organism I obtained from the liver juice, the ascitic fluid, the lymph from the mesentery, heart, blood, kidney and mesenteric glands.

The colonies at first were very minute and the organism with its pronounced polymorphism and tendency to change from the diplococcoid to the stumpy bacillary form, closely resembled that seen in the Pictou Cattle Disease. Examining a series of sections of twenty cirrhosis livers I found these present in the liver cells as minute diplococcus-like bodies surrounded by a faint halo, so small as best to be studied under a very high power of the microscope, namely, under 1-18th or 1-20th immersion lens. Here the tissues in general had a brown stain, but now, as I pointed out in the paper contributed to the *British Medical Journal*, Oct. 22nd, 1898, further studies throw a very considerable light upon this remarkable form. They showed conclusively that both the form obtained from the Pictou Cattle Disease (as indeed had been suggested by Professor Boyce in the discussion upon my paper in Montreal, 1897) and that from the human livers, were at most varieties of the colon bacillus the organism, that is to say, which is the common inhabitant of the lower intestinal tract in man and the majority of warm-blooded animals. They were obviously attenuated and grew more slowly than the typical colon bacillus, they did not cause the same rapid turbidity of broth, while culture outside the body rendered them more active in their growth until eventually they closely corresponded in size and in most of their properties with the group of colon bacilli. Their effects when inoculated into rabbits and guinea-pigs resembled also those seen in connection with the colon bacillus.

I may here add that Dr. Charlton, now Fellow in Pathology at McGill University, has studied the organism of Pictou Cattle Disease within the last year, which we have kept growing for some years in our laboratory, and found that it corresponded in all particulars with one form of colon bacillus described by Dr. W. W. Ford, in his study of the varieties of colon bacilli isolated from man. This form was isolated by Dr. Ford from the spleen of cases of typhoid in man and has, briefly, the following characters:—It is a stumpy bacillus having a diameter less than 1 mm., motile, forming no scum when grown on broth and causing slight turbidity of that medium. Growths upon agar are smooth and glistening, not very abundant; no liquefaction of gelatin; growth upon potato visible and luxuriant (in the early stages the growth upon this media was but slight); it grew in the closed end of Smith's fermentation tube and best at the body temperature; it can grow in the absence of free oxygen ; causes no liquefaction of either gelatin, casein or blood serum; it produces gas when grown in dextrose and lactose broth, but not with saccharose; there is no production of nitrites, but indol is present (originally no indol was present); milk is turned acid and eventually coagulated and there is a slight fæcal odor; no production of pigment upon agar; no fluorescence (originally many of the cultures obtained direct from the cattle showed a distinct tendency for the production of a slight yellow color). It grows best in media which are faintly acid and is non-pathogenic for mice (the early cultures of this showed themselves distinctly pathogenic for mice and this I regarded as one of the indications that I was not dealing with the colon bacillus).

It is interesting to note that parallel with this Dr. Charlton studied the colon bacillus obtained from the stomach of a case of pernicious anæmia in man and this gave identical reactions.

It is thus clear on the one hand that the organism of the Pictou Cattle Disease is one of a very large group of colon bacilli, and this alone throws some little doubt upon whether it should be regarded as the specific micro-organism of that disease, because while colon bacilli have pathogenic properties, and, in fact, set up many forms of disease in man, the morbid conditions induced by them are all more generalized and not so specialized a type as that possessed by this disease. But from another point of view, if we are not to regard these as the specific organism of the disease, we are, I think, bound to regard to it as playing some part in the development. For, on the one hand, as pointed out by Dr. Wyatt Johnston and Mr. E. W. Hammond, the blood of cattle affected with this disease agglutinates the micro-organism isolated by them from their livers and this agglutination test is in general regarded as an indication of such relationship between microbe and disease; and secondly, these micro-organisms are present in such abundance in the liver and mesenteric lymphatic glands and that so constantly, that they cannot be regarded as meaningless.

As pointed out in my paper of Oct. 22nd, 1899, yet further study showed me that in a great number of livers having no symptoms of cirrhosis, similar minute diplococcoid forms are to be recognized in the cells (although in not such great numbers). While again, as I pointed out at full length in a paper upon the diplococcoid form of the colon bacillus (Adami, Abbott, Nicholson, *Trans. of the Assoc. of Amer. Physicians*, 1899, and *Jour. of Experimental Medicine*, 1899, Vol. 3), by inoculating pure cultures of typical colon bacilli into the veins of a rabbit after a few hours one gets similar appearances.*

These observations led me further to study the bacteriology of apparently normal healthy organs and as I pointed out in my address at Chicago, in December, 1899 (*Journ. Amer. Med. Assoc.*, Dec., 1899) we are bound to conclude under ordinary conditions that there is a constant passage in of colon and other bacilli from the intestines throughout life and these diplococcoid forms staining badly, and often having a brownish tinge, are present in the abdominal lymphatic glands and in the artery, indicating the constant destruction of these bacteria in these organs. Since then the very remarkable paper of Dr. Ford, late Fellow in Pathology, McGill University (*Trans. of the Assoc. of Amer. Physicians*, Vol. XV., 1900, p. 399, and *Journal of Hygiene*, Vol. I., 1901, p. 277), has carried on these researches further and has shewn that in at least 80 per cent. of the livers and kidneys of healthy normal animals, bacteria are to be obtained which are capable of development provided the proper culture media be adopted and provided that these organs be cultivated for a sufficiently long time after their removal from the animals used.

How now do these observations bear upon Pictou Cattle Disease and upon ordinary portal cirrhosis in man? As I pointed out in the *British Medical Journal* of October, 1898: "It may be argued that inasmuch as such forms are constantly to be found in the liver, it is clear that the bacillus can, under ordinary conditions, have no power to induce excessive active tissue formation, or otherwise, every living being should suffer from cirrhosis. But there is this to be noticed: In the ordinary liver in which cirrhosis is absent, the forms visible are almost all corpses and even long action of strong carbolized fuchsin will not lead them to become stained. In cirrhosis, on the other hand, while there are many of these non-staining forms, areas can be made out in which diplococcus-like bodies stain deeply. Either they have only recently entered the organ and are just killed, or they are still alive, though in a form so attenuated that it is only with difficulty that cultures can be grown from the organ. I still cannot but consider that the very great number of these forms found in well marked advancing cases of cirrhosis is ample evidence that there is a direct relationship between them and the process. So also in these advancing cases of cirrhosis my observations show me that the mesenteric glands are crowded with the diplococcus form of the bacillus, just as I found them crowded in cases of Pictou Cattle Disease."

---

* Ohlmacher in the last number of the *Journal of Medical Research* has confirmed fully our observations upon the existence and peculiar properties of the diplococcoid forms of the colon bacillus.

I further suggested that in ordinary human cirrhosis we have almost always a history of subacute enteritis or gastro-enteritis set up apparently by alcohol or some other irritant, and that this inflammation of the bowel by leading to the greater passage out of leucocytes and passage back of these leucocytes containing bacteria, set up a condition of increased invasion of the organism, more especially the colon bacillus as the normal habitant of the intestine, and here I referred to Ramond's observations (*La Presse Medicale*, April 21, 1897), in which he obtained cirrhosis by giving animals by the mouth alternating doses of alcohol and bacterial toxines.

Now, it is interesting to note that the constant lesion in Pictou Cattle Disease is the evidence of ulceration of the fourth stomach. Here it seems to me is the indication of a similar gastritis or gastro-enteritis. According to this theory, therefore, the colon bacillus or modified form of the same, which I have detected in these cases, is not necessarily the prime cause of the disease, but there is a preliminary and primary inflammation of the intestinal tract. This may be brought about by the colon bacillus, but is more likely to be induced by some other cause, either bacterial or toxic, and it still remains to be discovered what is this primary cause.

That certain forms of the colon bacillus under certain conditions are able to bring about cirrhotic changes, has been shewn by Dr. Weaver of Chicago (*Philadelphia Med. Journ.*, Feb. 4th, 1899). He obtained the colon bacillus which he worked with from the body of a female guinea-pig, and like our Pictou Cattle Disease organism, it did not produce indol, while he notes further that it was non-motile and showed no flagella. On the other hand, there was abundant gas formation in glucose agar. Guinea-pigs inoculated with a small amount of the culture, if they did not die within 20 hours, lived from eight to twenty days, and in these animals dying at later periods there was an extensive and early cirrhosis of the liver. Unfortunately after a short period these bacteria lost their virulence so that further transference of cultures could not be made.

These observations, so far as they go, are in favour of believing that the organisms of the colon group play a definite part in the production of cirrhosis.*

During this last summer, on his return to New Zealand, Dr. J. A. Gilruth, Chief Veterinary Officer, and Bacteriologist to the Agricultural Department of New Zealand, in passing through Montreal, called upon me and brought my attention to the fact that in New Zealand they have encountered a very similar disease affecting horses and cattle. Since then he has been good enough to forward to me the Reports of his Department dealing with this subject. I may here give an epitome of his observations, (Fifth Report of the Department of Agriculture of New Zealand, 1897, p. 35):—

The disease appeared in the Winton District in Southland 14 years previously, and has not been observed in any other part of the colony. While there has been considerable loss of horses, it showed little or no tendency to spread from farm to farm. No particular age or breed was found more susceptible, although the affected animals were mostly aged, the season appeared to be without influence, though possibly spring and autumn were the periods during which the majority of cases were found. Cases observed by Dr. Gilruth showed jaundiced appearance of the mucous membrane of the mouth, eyes and nostrils; want of co-ordination of the muscles of the limbs; with staggering gait; staring condition of the pupils; constipation and general drowziness. At times the animals would walk straight through an obstruction. In all cases the liver was more or less involved and apparently cirrhotic. Judging from his description the course of the disease is of longer duration than is that of Pictou Cattle Disease.

On microscopical examination the liver showed a variety of conditions, but in the early stage the capsule was normal, the tissue of the gland soft; vessels greatly distended with blood and the liver cells atrophied; thrombi were often encountered in the hepatic veins and a certain amount of pigment was present in the liver. In the later stages the liver is smaller and harder than normal, presenting in one case all the naked eye appearances of the cirrhotic or hobnailed liver. Dr. Gilruth noted also, which was not observed in cattle, namely, appearances of abundant liver cells within the vessels of the liver and other regions.

It is worth while noting that he found that one-half grain doses of strychnine given in powders, one daily, appeared to have a distinct effect in arresting the course of the disease, while purgatives aggravated the symptoms. In this report, Mr. Gilruth calls attention to the constipation and suggests that owing to the want of tone of the intestinal walls, the retained food fermenting leads to the abundant production of toxic substances which, being in their turn absorbed, cause the symptoms of intoxication, etc.

---

* Professor Hektoen (*Journal of Pathology and Bacteriology*) has also been able to induce cirrhotic changes in the liver by inoculations of colon cultures.

In the Report for 1898-99, are given illustrations showing the close resemblance of the liver disturbance to those seen in our Pictou Cattle Disease. In this second Report, Dr. Gilruth modifies his opinion that the intense congestion is the main condition in the liver and regards this as secondary to the cirrhotic change.

In this Report he gives a case of a farmer who had lost several cows under peculiar conditions with similar symptoms in each case. This also occurred in Southland where the ragwort is very prevalent, and to this the owner attributed the disease. I infer from a paragraph in the Report for 1898 (p. 41), that the Ragwort (Senecio Jacobœa) had also been regarded as the cause of the Winton Disease and that this weed is common in other parts of Southern New Zealand without causing any disturbance; hence he denies its relationship. The conditions here were similar to those seen in our cases. The micro-photographs given of a section of the liver might have been taken also from a case of Pictou Cattle Disease. On this farm mentioned the Government Biologist, Mr. T. W. Kirk, had the previous year reported the existence of no poisonous or even harmful plant, but Dr. Gilruth found that in addition to the Senecio Jacobœa, to which apparently he attached no importance, the cows had been in the native bush close to the paddock, and that they were all in the habit of stripping the leaves from the trees which were being felled there.

It is, to say the least, interesting that in Nova Scotia the popular view has been to attribute Pictou Cattle Disease to the existence of the ragwort. For myself, I continue to be doubtful as to whether any such relationship does exist, although believing in the existence of some primary cause, not necessarily microbic. I should be glad to find that the irritation caused by the ragwort was of this nature. Nevertheless, the negative results of the experiments conducted under this Department years ago by Dr. Wm. McEachran (when animals were fed for long periods upon dried ragwort), would seem strongly to negative this supposition.*

---

* Dr. H. Wolferstan Thomas, of Montreal, writes to me within the last few days that he is engaged in Professor Kitt's laboratory at Munich, studying a similar "hepatitis induration" or cirrhosis, very common among the horses in a certain egion in Bavaria, known as the 'Schweineberger Krankheit,' which is also locally attributed to poisonous fodder; so far attempts to give the disease by feeding animals with hay, &c., from the affected regions, have been without success.

My conclusions may be summed up thus:—While it is possible that, as suggested by Dr. Weaver's observations, cirrhosis of the liver may be directly caused by one or other of the colon bacillus group, I am inclined to favor the opinion that there is a primary irritation of certain portions of the alimentary tract set up by some other irritant, and that it is this primary inflammation which favors the extensive invasion of the blood and lymphatic vessels of the abdominal area, by bacteria mainly belonging to the group of colon bacilli, which bacilli, by their direct presence in the lymphatic glands and in the liver, and by their toxines set up those cellular disturbances which result in the production of the peculiar anatomical changes found in the Pictou Cattle Disease and in progressive portal cirrhosis in man.

ADDENDUM.

In addition to these abstracts from the Annual Reports of Dr. Gilruth, the following notes of a conversation held with him upon June 6th, 1901, are, I think, of distinct interest:—

The district in which the disease occurs is in the neighbourhood of Winton, and covers a limited area of about 20 by 30 miles. Both cattle and horses are affected, and it is noticeable that on a given farm the horses and cattle are not affected at the same time. The characters of the disease in the cattle seem identical with those seen in the Pictou neighbourhood; in horses the excitement is more marked, the animals rushing into various objects, bursting fences and so on, this state of excitement being followed by exhaustion, paralysis and death. At autopsy in horses there is clear, rather viscid ascites of moderate extent with gelatinous œdema of stomach and intestines, the liver is sometimes enlarged, juicy and tends to be more cyanotic than in cattle. During life he noted evidences of cardiac irregularity and failure, the pulse being intermittent.

He had observed the coccoid and diplococcoid bodies in the liver cells, but could come to no sure conclusion with regard to their relationship to the disease. So far he had not obtained constantly in cultures any one constant form, though he and those working under him had frequently come across colon types. Inoculation had been without results as again had the feeding of animals with large quantities of minced up liver from affected animals.

The farms in the neighbourhood resembled ordinary Scotch farms, are well kept and grassed with English grass. The cattle are not fed upon hay, but chopped oats and maize which form the winter diet. The animals stray into the bush during the summer, but he noted that the disease also affected those kept during all the year round the farms.

Senecio Jacobœa is very abundant over the district, but horses will not eat this, as again feeding animals with the ragwort has led to no results. Further, many farms outside this district are infested with the senecio, and the animals upon them do not present a sign of the disease.

Dr. Gilruth most suggestively compares the disease to alcohol intoxication; he noted that the horses kept in the stables and fed sparingly did not manifest the symptoms of excitement. Animals escaping into the open have a voracious appetite, eating dried leaves and anything which could serve as fodder, and, after this, become wildly excited, staggering about. He was thus of the opinion that for the production of the disease there must be a double factor—some primary lesion of very chronic development followed by gastro-intestinal intoxication.

This being but the notes of a conversation, after some consideration I did not insert them in my report to the Government, more especially as the distance from New Zealand prevented me obtaining Dr. Gilruth's permission to quote them. Upon further consideration, the notes appear so valuable and exhibit so well Dr. Gilruth's powers of careful observation, that I think I may venture to quote them here even in the absence of definite permission.

THE INFLUENCE OF SCHOOL LIFE ON CURVATURE OF THE SPINE.*

BY

R. TAIT McKENZIE, M.D.,

Demonstrator of Anatomy and Medical Director of Physical Training, McGill University; Medical Examiner to the Montreal High School.

In a series of examinations, covering a period of four years in the Montreal High School, of boys varying in age from 13 to 18 and averaging a little over 15 years, I have been struck by the number that presented some marked irregularity of growth, and on tabulating them I find that 20 per cent. of all those examined have a marked lowering of the right shoulder, 3 per cent. have the left low, scoliosis was found in 2 per cent. lordosis marked in 5 per cent. and round shoulders in 3 per cent.; while the habitual standing position of 30 per cent. approaches more or less closely to what Bernard Roth has aptly named, the "gorilla type"—abdomen protruded, chest flat and head shoved forward.

These defects are found, not among school boys alone, for out of 500 college students of the athletic class examined at McGill, 12 per cent. showed these same defects, varying from slight unevenness of the shoulders to marked scoliosis. In an examination of 54 students of the Royal Victoria College for Women during the past year, I found 19 presenting some marked deviation from the normal, 11 having right shoulder low, and in four others well marked scoliosis—eight girls complained of persistent backache.

With such a great prevalence of defects and deformities among high school and college students who are in a supposedly normal condition, does it not seem worth while to attempt its prevention if the scientific, hygienic regulation of the hours of school life can be used for that purpose?

Perhaps an enquiry into the condition of the spine during the years of childhood will show better than anything else the way in which ordinary scoliosis, or as I prefer to call it, "fatigue scoliosis," is brought about—and I may say in passing that the great bulk of cases are of that class—the other causes such as rickets, paralysis, etc., are responsible for but very few cases in comparison.

In infancy the spinal column is straight or bent from hips to head in an even backward curve, the bones are not yet ossified and present a mass of cartilage with small deposits of bone. Between the vertebræ the discs are very soft and compressible, and the ligaments pliant and easily stretched. Immediately on assuming the upright position certain changes take place. A sharp forward curve develops in the lower lumbar region continued up into the dorsum, so that the infantile curve is reversed, and the lower part of the back is hollowed. Gradually a compensatory curve develops in the dorsal region and increases until a well marked backward curve of the back is the result, and by the time adult life is reached a third has developed in the cervical region in the same direction as the lumbar.

---

* Read before the Montreal Medico-Chirurgical Society, February 7, 1902.

It is while these curves are forming that the child's school life is passed. The formation of the first or lumbar curve is helped greatly by muscular action—the great mass of the erector spinæ muscle pulling back on the vertebræ of the lower part of the dorsal region acts like a bow string, while the powerful psoas muscles springing from the front and sides of the vertebræ and going down to the thigh, further help in the formation of the curve forward by being on the stretch when the child is in the standing position. The other curves are undoubtedly compensatory in character. The muscles that act on the spinal column are most intricate and numerous, the superficial layers consisting of long strands passing, some to ribs, but mostly from spinous process to transverse process of the vertebræ. The deeper layers are shorter and the deepest pass only from one bone to its next neighbour. Gray describes five distinct layers each containing from 3 to 12 muscles. This apparent redundance and unnecessary complication is after all the best means we have in preserving the upright posture for any continuous length of time.

We know that if we hold the arm out at right angles, the fatigue and pain at the shoulder soon become intolerable, and few can stand the test as long as five minutes. The main strain falls on the deltoid, which has no relief from continuous action. The same condition would result in the back without this system of small muscles that keep working in relays, each slight movement brings into action a new set relieving the tired ones. Without this ingenious arrangement the erect posture would be an impossibility, and anything that will interfere with this intermittent action of the muscles will hasten the oncome of fatigue and collapse.

The constant desire for movement is the most striking quality of young animal life; the play instinct so wonderfully understood by Froebel. and so sapiently applied in the games of the kindergarten to the development of the best physical powers of the child. But with his introduction to regular school life the child's physical troubles begin. He is made to sit still from 3 to 6 hours, with but momentary rests at long intervals, the play instinct expressed by continual restlessness has to be sternly suppressed by the teacher for the sake of discipline.

The rapid fatigue of the undeveloped muscles and the irregular compression of the growing bones is enough to encourage and fix faulty postures, but if we analyze the writing posture we can easily trace the progress from the normal to collapse in the position of pronounced scoliosis or skewed back. I quote from Dr. Fahrner, whose description is so terse that to change it would be but to paint the lily:—

"Before writing begins the children sit perfectly upright with both scapulæ thrown back equally. As soon as writing begins all the children move their heads slightly forward and to the left. Soon head after head drops with a rapid jerk from fatigue of the neck muscles, in a short time the back also collapses so as to hang from the shoulder blades supported by the upper arm. The two types are seen, depending on the part of the book they are at. Those writing on the upper part support themselves on both elbows, and let the chest sink forward against the desk, and the back becomes curved forward—the round back. The eyes are three or four inches distant from the desk, and the support is from three points, the left elbow, the chest and the right forearm slightly. When at the bottom of the book they lose their third support and have the left elbow alone; and add to these faults of position a twisting or skewing of the back toward the right. The head is bent toward the left shoulder, the right arm with the scapula standing out like a wing, rests anywhere and lightly, and the eyes are too close to the paper."

This is the process of collapse or tiring out the spinal muscles as you tire out an arm by holding it at right angles, and scoliosis as the writing position becomes fixed.

The evils of this "confinement with hard labour" are notably increased and made more dangerous by ill-fitting desks and seats. This subject has been taken up so fully by more able and better informed observers, such as Scudder and Hartwell in America, Cohen in England, and Fahrner, Eulenberg and Bach in Germany, that I will do little more than mention the defects usually found, and name the remedies that have already been found efficient in combatting these evils:—

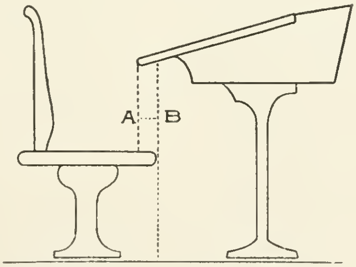
The seat may misfit in three ways: it may be too low, bringing the weight on the hip bones and cramping the knees; it may be too high, leaving the legs suspended in the air from the knee—a position that interferes with the circulation in the legs and causes rounding of the back; or, the seat may be too deep and the back is thus prevented from reaching the back rest, with rounding of the whole back as a result.

The desk may misfit in five ways—when too low, the pupil must bend forward and round the shoulders; when too high, the book is brought close to the eyes and the shoulder must be raised and the back skewed in writing; when the desk is flat, or but slightly sloped, the head must be brought too far forward in reading. In the placing of a fixed desk, too great a distance between it and the seat results in some of the same defects as in a low desk; the forward bending and stretching in writing, while if too near, the chest is cramped and respiration interfered with.

With so many errors it would seem a delicate matter to steer clear of them all and get the ideal desk, and if children are to spend five or six hours a day in their seats before their desks, it is surely a matter of the gravest moment that, added to confinement and fixity of position, evils in themselves, there be not added the crime of misfitting desks and seats, to accelerate weariness and hasten the production of the fixed scoliosis of fatigue.

The problem is to have a seat whose length and breadth is proportional to the under surface of the thighs and buttocks of the sitter. To place it at such a height that the sitter's feet may rest flat upon the floor when the legs are bent to a right angle, and to provide a rest that will support the sitter's back whether quiescent or actively engaged. The desk must be of the right height and slope. The under surface must not cramp the knees, and above all, it must not be placed so far forward in relation to the seat as to require undue leaning forward in the sitter.

The last defect is shewn in the normal dimensions given by Eulenberg and Bach, but was probably a concession to convenience as permitting the pupil to get in and out more easily. A vertical line dropped from the edge of the desk cover to the chair seat is called the "difference" while the space between this line and the edge of the seat is called the "distance." If the desk overhangs the seat, the distance is said to be minus, if not, it is said to be plus. Remembering these two technical terms, it is easy to explain the points of a well fitting desk.



A = difference = elbow top to seat.
AB = distance = 2 inches, desk slope= 1 to 6.
B = undersurface of knee to foot sole.

The "difference" should be equal to measurement from the elbow tip to the seat, the forearm being bent at right angles and elbow to the side. The "distance" should be minus two inches, but if adjustable for distance so much the better.

The desk slope is best at one in six inches. The seat height should equal the measurement from the under surface of the bent knee to the sole of the foot. The depth of the seat should enable the back to touch the back rest throughout. The back rest should have a projection for the loins, and should sweep backward to follow the natural curve of the back, and give the figure a slightly reclining pose.

If, in the furnishing of a school-room, the furniture cannot be made adjustable throughout, some at least in every room should be so made, and the others constructed on the model just laid down, the result of years of experiments and thought by skilled observers.

Even with well fitting seats and desks the present writing position is such as to favour to a marked extent the formation of fatigue scoliosis or the permanent skewed back. Vertical writing has been spoken of as a panacea for the "skewed back." It has been so strongly recommended by Cohen of London that he says, "with the slanting script one never knows whether a pupil has sat upright or not, with the vertical script he must have sat upright while writing." Dr. E. R. Shaw has pretty clearly shewn this to be fallacious, but the fact remains that its adoption would tend to lessen the frequency of fatigue scoliosis, especially if care were exercised by teachers to keep the pupils rested and in good condition.

The third point that tends to produce faulty posture, the starting point of lateral curvature, is bad lighting of the school-room. If insufficient, we have at once the rounded back and stooped shoulders in the pupil who cannot see clearly. The same effect is produced when the windows are so arranged that the pupil sits in his own light. The windows should be placed high up and the light should fall over the left shoulder and never directly from the front or back.

Every school system should have a medical officer as adviser. His duties should be, in brief, somewhat as follows:—

1st. He should give advice in the construction of school-houses, in matters of general hygiene but more particularly in the lighting and seating of the school rooms.

2nd. He should inspect the room from time to time during school hours, to see that the pupils are not misfitted in desks or seats.

3rd. He should make a careful examination of the muscular system and heart and lungs, etc., in all pupils before taking part in the rougher games, such as football and basket-ball, and keep a record of these examinations.

4th. He should be consulted by teachers in all cases where they observe a tendency to curvature or weakness, or dullness of any of the senses, and they should then be examined carefully and a record kept. These cases should be followed throughout their school life and the teachers informed of their defects, and where necessary the parents should be warned and advised.

The school should be the place for the detection and prevention of faults in growth, but the gymnastic treatment of these cases, if undertaken at all, should be confined strictly to what Dr. Sargent has called "straight work," in which both sides of the body are equally used, and it does not fall within the province of the school to specially treat them any more than it would to prescribe glasses for astigmatism. Such work is therapeutic and requires special individual medical treatment which the instructor, when one is available, has not the time to give, even if he could. It is in such cases that the value of an adviser is apparent, for even those unfortunates that have passed unheeded through the plastic first stages of scoliosis till the faulty posture has become habitual, may, by corrective treatments, be restored, in part at least, to symmetry and comfort.

A SIMPLE METHOD FOR BACTERIOLOGICAL EXAMINATION OF MILK SAMPLES.

BY

Wyatt Johnston, M.D., and F. E. Jones, M.D.,
(From Hygienic Laboratories of the Provincial Board of Health and McGill University, Montreal.)

We desire to report briefly some observations we have made with a view to simplifying the technique for the bacteriological examination of milk so as to permit of this very useful and important test being more generally used than is the case at present.

The method commonly recommended for the bacteriological examination of milk is to estimate the number of bacteria growing on gelatine plates. This gives information of great practical value, for one can readily recognize milk in good condition from that which is bad. We know that a rigid observance of the most scrupulous care in the care of the animals, in milking, storing, airing, cooling and shipping the milk as well as proper precautions as to cleanliness of the utensils and the hands of the milkers are all necessary to keep the number of bacteria in fresh milk below 10,000 per cubic centimeter at the time of delivery.

The importance of this is only now beginning to be realized by the health boards and the medical profession. We have, in fact a ready means of controlling the milk supply, sufficiently simple to be carried out by a medical man, or by the head of the family, or the milkman himself, and capable of being popularized, as in the case of the taking of samples of blood, sputum or throat exudate.

The method of making cultures for this purpose as usually carried out is by diluting 1 cc., or a fraction of 1 cc., of milk taken in a sterilized pipette with 500 or 1,000 times its volume of sterilized water in order to obtain a convenient number of colonies, for counting, in the plate culture. This can only be conveniently carried out in a laboratory, and, as the number of bacteria in milk tends to increase rapidly, delay in transmitting to a laboratory is a serious source of error.

It has been found by those occupied with the bacteriological examination of milk that the use of a wire loop gives sufficiently ac-

---

* Read before the Montreal Medico-Chirurgical Society, January 7, 1902.

curate results to enable the dilution to be dispensed with. This plan appeared to us to be the one most suitable.

A series of comparative tests with the loop and dilution methods gave the following results:

Loop method.	Dilution method.
27,000	33,000
37,000	36,000
139,000	160,000
187,000	194,000
48,000	54,000
480,000	460,000
160,000	172.000
546,000	530,000
83.000	64,000
134,000	169,000

It will be seen that while the dilution method is somewhat more uniform the difference is slight, and the loop method gives results near enough for the work in question.

We have found that a wire of No. 25 gauge when formed into a loop which fits closely over a knitting needle, size No. 18, furnishes a loop which takes up with great constancy 1-1,000 cc. of milk, which we have found the most convenient unit to work with. This may only apply to the materials we have personally tested, as the gauge both of wire and needles varies somewhat, and it is necessary to callibrate them.

The outfit used is extremely simple. The following is taken from the card giving instructions to those making use of the test.

BACTERIOLOGICAL DIAGNOSIS OF MILK.

Directions for Use.

1. Melt the gelatine by warming it just enough to make quite fluid; do not heat it strongly.

2. Inoculate the melted gelatine with one loopful of milk by means of the wire loop. Take care to avoid contaminating the loop by contact. Shake up the vessel containing the sample. Avoid taking the sample from the surface cream or from the sediment.

3. Distribute the milk uniformly throughout the gelatine by sharply rotating the bottle without actually shaking it. Let the bottle lie on its side till the gelatine is quite firm. Take care that no gelatine reaches the cotton wool stopper. Cooling may be hastened by laying on any cold surface.

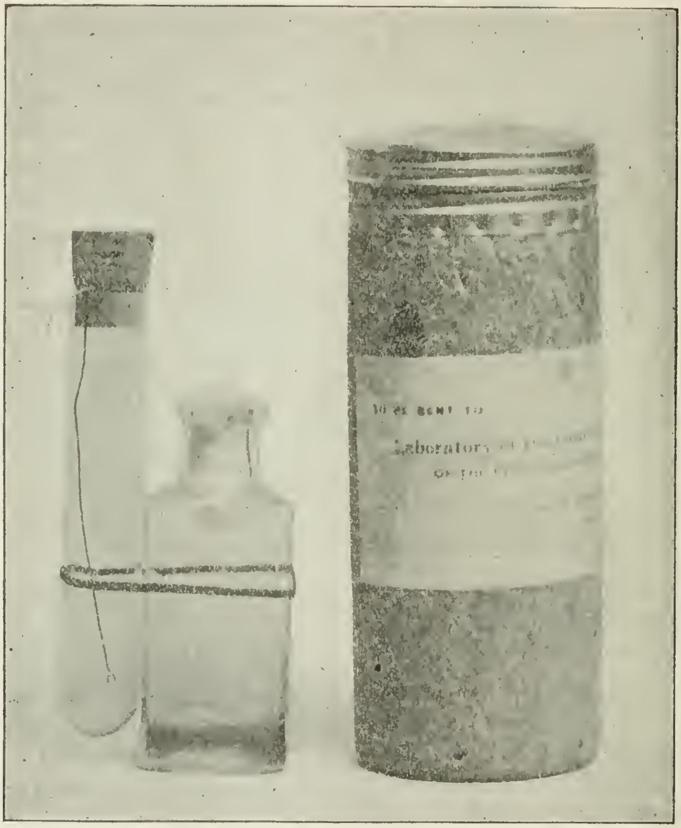
4. Fill the stoppered tube with a sample of the milk for control. Return the wire loop with the outfit.

5. Fill out the card and transmit the outfit to the Laboratory of the Board of Health, Province of Quebec, 76 St. Gabriel Street, Mont-

real. Take care that the outfit is not exposed to a temperature above 70° F. or below 35° F. so as not to melt the gelatine or destroy the bacteria by freezing. A report will be made as a rule on the second or third day.

N.B.—In case of pasteurized milk 10 loopfuls to be taken.

The loop of aluminum wire (suggested by Dr. L. B. Wilson as a substitute for copper wire which we first used) is furnished sterilized in a corked test tube, also sterilized. This is placed in a small mailing case together with a flat sided Blake vial containing nutrient gelatine ready for use, a tag to serve as a label and a slip of printed directions for use. For ordinary milk one loopful suffices for the inoculation. In the case of pasteurized milk or milk likely to contain less than 5 colonies per cc. ten loopfuls are preferable. The development of exclusively spore-bearing bacilli is evidence that the milk has been sterilized.



In order to make sure that the result of a low count of bacteria is not due to the addition of preservatives these can be tested for, if the sterilized tube containing the wire loop is filled with milk and returned with the sample. An amount of 20 cc. suffices not only for this, but also for testing the fat and total solids if desired, or for making a microscopic examination of the sediment obtained by centrifuging. In the case of milk containing large numbers of bacteria the detection of preservatives is less important.

Arrangements have been made by which these outfits are supplied at the request of physicians or milk dealers by the Board of Health of the Province of Quebec. A source of error of which little is generally known is the reduction of bacteria which occurs when milk is frozen, so that this must be guarded against in rigorous weather.

The question of adopting fixed standards for bacteriological purity of milk is one which has recently attracted some attention. It may be conceded that 500 colonies per cc. is about the maximum permissible for pasteurized milk. The explanation which we have had printed on the back of our report is the following:

EXPLANATION OF REPORT.

Class I.—First class milk should not contain more than 10,000 bacteria per cubic centimeter.

Class I.—With 10,000 to 100,000, the milk, while not first-class, may be still usable.

Class III.—With 100,000 to 1,000,000, it is in a decidedly poor condition and had better be pasteurized before use.

Class IV.—Milk having over 1,000,000 has deteriorated to an extent which makes it objectionable as a food.

Milk containing any chemical preservatives is unfit for use. Good pasteurized milk should not contain more than 100 to 200 bacteria per cubic centimeter. In order to keep the number of bacteria below 10,000 limit at the time of delivery, great care must be exercised in milking, stirring, cooling and shipping the milk and failure to secure this result will be found due to the neglect of some essential precaution. At temperatures below 40° or 50° F., very little increase of the bacteria occurs.

This agrees in the main with the classification adopted by the milk commissions of this society: "Milk not pasteurized and not delivered in the city within four hours after milking must not contain more than 30,000 bacteria per cc. at any time of the year. Fresh milk with less than 5,000 colonies per cc. to be classed A.A.; with 5,000 to 15,000 A.; with 15,000 to 30,000, a; above 30,000, B.; above 100,000, C. Milk not to be considered as germ free unless pasteurized twice. Acidity of the milk not to exceed 0.2 per cent."

This standard has been finally adopted by the city health department for over a year, but it will be noticed that not one of the samples given in the table comes under the heading Class A, or even "a" and that two-thirds of them fall in Class C, although taken in December, at the most favourable time of the year.

We think that the method recommended is so simple that any milk inspector could reasonably be expected to make a bacteriological examination of all samples collected as a matter of routine, and at the same time to give any persons interested in the purity of the milk supply an opportunity of obtaining direct information about any particular milk without expense or unnecessary delay.

REPORT ON THE CASES OF PNEUMONIA ADMITTED TO THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1901.

BY

MALCOLM MCKAY, M.D., House Physician.

During the year 1901 there were treated in the medical wards of the hospital 41 cases of pneumonia, of which 25 were males and 16 females.

There were in all 6 deaths, a mortality of 14.5 per cent.

The cases may be classified as follows: (1) Thirty-one cases of acute lobar pneumonia, with 4 deaths. (2) Ten cases of acute bronchopneumonia, with 2 deaths.

Etiology. *Age.* The average age was 27 years, the oldest patient being 69 years, and the youngest 7 months. Nine cases were under ten years; from 10 to 20, there were 6 cases; from 20 to 40, 10 cases; and over 50, 4 cases.

Season. Fifty-eight per cent. of the cases occurred during the months of March, April, May and June; while 29 per cent. occurred during the months of October, November and December.

Exposure. In 26 per cent. of the cases there was a history of unusual exposure to cold or wet immediately preceding the onset of the illness.

Infection. One case was received from a family in which the mother was suffering from pneumonia.

Predisposing Causes. Thirteen per cent. were suffering from disease of the upper respiratory passages immediately before the onset. In one case there was a history of alcoholism. Two cases had previously suffered from previous attacks of pneumonia.

Onset. *Chill.* In 39 per cent. chill was one of the first symptoms. In 12 per cent. there were chilly feelings without a definite rigor.

Pain was the commonest symptom of onset. It was present early in the disease in 86 per cent. of the cases. In the majority of cases it was situated in the vicinity of the pulmonary lesion, but in 7 cases it was referred to the abdomen.

Vomiting occurred early in 39 per cent. of the cases.

Cough was present early in the disease in 68 per cent. of the cases. In most of the cases it was hard and painful.

Anorexia, malaise, and *feverishness* were present from the onset in all cases.

Delirium occurred on the first day in one case. In 7 per cent. the onset was gradual, with malaise and loss of appetite.

Symptoms and Course. The average duration of fever was eleven days, the shortest course was three days, terminating by crisis. The longest course was 59 days, fever persisting until the end of this time, while resolution did not occur until the 42nd day.

Part Involved. The lower lobes were involved in 26 of the cases, and the apices in 19 of the cases. In 13 cases the left lung was involved; in 11 cases the right; and in 7 cases both lungs.

Sputum. The sputum was blood-stained and tenacious in 68 per cent. of the cases. In 7 cases, all children under ten years, there was no sputum.

Cough was present in all cases, and in 90 per cent. was described as severe and hacking.

Alimentary symptoms. Anorexia was present in all cases, constipation in 16 per cent., diarrhœa in 16 per cent., while there was vomiting in 39 per cent. of the cases.

Crisis occurred in 47 per cent. of all cases, and on the average occurred on the eighth day. The earliest crisis was on the third day, and the latest on the fourteenth day. Twenty-five per cent. of the cases terminated by lysis, while a pseudo-crisis occurred in four cases.

Complications. Herpes occurred in three cases, in all of which it was labial.

Delayed resolution occurred in four cases.

One case was complicated by pregnancy (seventh month), and on the third day the abortion took place, when a dead male child was born. The case terminated favourably.

In two cases there were symptoms of meningitis; one died, while the other one made a good recovery.

Otitis media occurred in one case and abscess in the thigh in another.

Mortality. Four cases proved fatal, *i. e.,* 12.8 per cent.

The *first* case was that of a man aged 65. Death took place on the sixth day of disease; the patient had chronic nephritis and died of heart failure.

The *second* case was that of a man aged 36. Death took place on the seventh day of the disease. The patient had pronounced abdominal symptoms, vomiting and tympanites. Death followed acute dilatation of the heart.

The *third* case was that of a child of seven months. Death took place thirteen days after admission to the hospital. Patient had been very ill for a month before entering the hospital, pneumonia having been diagnosed at the onset of the illness. Fifteen days later the child had a convulsion and had been in a very low condition up to date of admission. The child showed well-marked symptoms of meningitis before death.

The *fourth* case was that of a man aged 69. Death took place on the eleventh day. The patient had arterio-sclerosis and chronic nephritis. He died of heart failure.

Two cases were treated with anti-pneumococcus serum. The first died, while the second made a good recovery.

In the first case the patient, a male aged 36, was admitted on the third day of the disease with the left base involved. Temperature, 104° F.; pulse, 136; respirations, 28. On the evening of the fourth day he had a temperature of 106 1-5; pulse, 140; respirations, 36. At 9.30 p.m., 20 cc. of the serum was injected, and by 9 a.m. patient showed temperature, 100 2-5; pulse, 118, and respirations, 30. Seven subsequent injections were made without much effect. Delirium was noticed on the fifth day and the patient died on the eighth day of the disease. This patient had several cold sponges, thus modifying the temperature and pulse rate.

The second case was a child, aged 6 years. He entered hospital on the seventh day of the disease with the left lower lobe involved and temperature 104 4-5°, pulse 150, respirations 60. The serum was injected soon after admission (7.30 p.m.), and at 8.30 a.m. the patient showed a temperature 100 2-5°, pulse 142, respirations 32. At this time a second injection was given, and after a slight rise, the temperature fell to 99 1-5° at 6 o'clock the next morning. The evening temperature went up to 102 4-5°, but it soon dropped to 99 3-5°. The fever ended by lysis on the twelfth day. Delirium was present from the first day of the disease and was very marked on the ninth and tenth days, when the patient showed symptoms of meningitis.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Herpes Zoster.

Roland J. Curtin, M.D. "Herpes Zoster and its Relation to Internal Inflammations and Diseases, especially of the Serous Membranes." *Am. Journ. Med. Sc., Feb., 1902.*

A. Van Harlingen, M.D. "Recent Views of the Nature and Origin of Herpes Zoster." *Am. Journ. Med. Sc., Jan., 1902.*

Curtin reports a series of cases associated with inflammations of serous membranes and disease of internal organs, and suggests the possibility of the existence of herpes of the serous membranes.

Five cases are detailed in which herpes zoster of the side of the chest appeared in association with a plastic pleurisy or pleurisy with effusion. In all of these it appears that the pleurisy preceded the outbreak of herpes. In abdominal disease similar cases are recorded. In a case of catarrhal appendicitis a typical herpes followed the inflammatory trouble, and was situated on the abdominal wall of the same side. In another a localized peritonitis in the right upper part of the abdomen was followed later by herpes in the same site. A case of herpes of the side followed by hæmaturia is recorded in which the zoster preceded the internal disease with a previous history of herpes of the face and hæmaturia. This case is the only one recorded by the writer in which the zoster preceded the internal affection. It may be concluded that the association of internal inflammation and zoster is too frequent to be the result of coincident, and that as the internal affection precedes the zoster it may be regarded as its cause.

(With the exception of the case of hæmaturia there would seem to be no reason to think that herpes in these cases did not result from direct injury to the nerves in the neighbourhood of the diseased membrane, and it hardly seems necessary to regard the primary condition as a herpes of the internal tissue.)

Van Harlingen gives an interesting résumé of the views which have been held on the nature and origin of herpes zoster. The distribution of zoster along the nerve trunks has been recognized for a long time, and it has usually been assumed that there is a disturbance of the trophic functions of the nerve, a theory which explains the pathology of the condition but which lacks actual proof.

A number of cases have been recorded similar to those of Curtin's, of visceral disorders of various kinds associated with zoster. Other cases seem to show a relationship with infective processes. Syphilis has thus been regarded as a cause, its specific agent or toxin acting on the spinal axis. Cancer, apart from the pressure of growth, coal gas and arsenic are all recorded as toxic agents capable of producing herpes.

Wasilewski regards zoster as due to an infectious agent. Prodromata, such as gastric disturbance and fever of sometimes, preceding the eruption, the occurrence of enlarged glands in the neighbourhood are points in favour of this view. Immunity is regarded by Wasilewsky as settled, but the numerous cases of recurrence are not in favour of this view.

Up to within the last year or two the distribution of herpes along the nerve trunks has never been questioned, although it has been occasionally noted to not correspond precisely with the nerve territory. Brissaud endeavours to show that the eruption corresponds to embryonic segments (metameres), whilst Abadie believes the eruption follows the arteries and are due to trophic influences proceeding from the sympathetic.

Taking ophthalmic zoster as an example, Abadie asks how it is, if zoster is due to an inflammation of the trigeminal nerve, that in it only occurs (save in the very rarest cases) in the first or ophthalmic branch. As a fact, maintains Abadie, the eruption extends over the area supplied by *supra-orbital*, *frontal*, and sometimes the *nasal* arteries.

The lesions of zoster, says Abadie are due to atrophic influence from the sympathetic nerve fibres, which, in the case of ophthalmic zoster, follow the course of the arteries, just mentioned. The pain and other nervous symptoms, which may or may not accompany the eruptions, are due to some involvement of the sensory nerves, which may be implicated in one case and not in another.

This theory is supported by the form of the eruption in thoracic zoster. This does not occur above the line of the third intercostal space. The arteries supplying the upper three intercostal regions, instead of proceeding from the aorta, are derived from the subclavian artery, and consequently their vascular origin, and that of the vasomotors which accompany them, are different from the others which come directly from the aorta.

This theory of Abadie's makes clear, so he says, the apparent anomalies of the eruption which are inexplicable otherwise, but it takes away from the sensitive nerves of relation a part which does not belong to them and assigns it to the great sympathetic. It proves that the latter really commands and regulates nutrition in all the regions to which it is distributed, whether visceral or cutaneous.

Finally Abadie says that quinine is specific in ophthalmic zoster. Now quinine is essentially a remedy which produces a constriction of the arteries.

Head and Campbell in a recent and elaborate paper record a number of post-mortem examinations. They find inflammatory and destructive changes in the posterior ganglia of the cord and in the Gasserian ganglion, and degeneration of the nerves leading to the skin. In mild cases these changes gradually pass away, but in severe ones the degenerated nerve fibres are replaced by fibrous tissue.

Degeneration in the spinal cord occurs secondarily to the herpetic lesion of the ganglion.

Head and Campbell conclude that some agent, the nature of which we are ignorant, selects the posterior root ganglion, producing inflammatory changes, leading to irritative changes in the nerve to which the cutaneous lesions are due. Direct irritation may induce herpes and a case is quoted where it followed the pressure of a lympho-sarcoma on the posterior root ganglion.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

Uterine Inversion.

PINARD, A. "Uterine Inversion reduced by means of the Champetier de Ribes Bag." (Inversion Uterine reduite à l'aide du Ballon de Champetier de Ribes.) *Annales de Gyn. et d'Obstet., Oct., 1901.*

Two cases of this rare affection were admitted to the clinic Baudelocque within a few months of each other.

The first case was a primipara, aged 34 years, whose health had been perfect during pregnancy, which terminated in a normal labour of six hours' duration. While having an evacuation from the bowel, forty-eight hours later, she felt a tumour between her thighs. The physician who was called recognized the condition, and, after taking antiseptic precautions, attempted to reduce the tumour as gently as possible. He succeeded in returning the mass into the vagina and then had the patient removed to the hospital. Here, attempts to further reduce the mass failed, and a Champetier de Ribes bag was introduced and left over night. Next morning, after examination under chloroform, it was decided to perform a vaginal hysterectomy as the piriform mass in the vagina was completely strangulated at the os uteri and its surface was in places quite gangrenous. The convalescence was prolonged and attended with fever and septic discharges from the vagina.

The second case, also a primipara, aged 24 years, after a normal pregnancy was spontaneously delivered of a female infant by a midwife. The labour was followed by a rather excessive bloody discharge which persisted for several days, when a physician was called, who found in the vagina a tumour mass the size of a fœtal head. She was admitted to hospital on the ninth day of her illness. Her general condition was serious, temperature normal, pulse 128. The uterine globe was absent from the hypogastric region. The finger introduced into the vagina immediately encountered a tumour which completely filled it. The vagina appeared to be lengthened. With great difficulty the anterior lip of the cervix could be felt high up behind the symphysis. It was impossible to reach the posterior cul-de-sac. There was no hæmorrhage. A small sized Champetier de Ribes bag was then introduced into the vagina. Ten hours later this was removed. The vagina was empty, the inversion having been partially reduced.

The os was widely dilated and the inverted fundus could be felt within it. Bimanually, a tumour mass could be felt reaching four finger breadths above the symphysis, presenting at its summit a cup-shaped depression.

A full sized bag was then introduced and dilated to its full extent. (Whether this bag was simply introduced into the vagina or into the dilated os uteri is not definitely stated). The next morning on removing the bag the inversion was found completely reduced. The after treatment consisted in the administration of quinine sulphate, antiseptic intra-uterine injections, and saline enemata. There was a moderate degree of fever for some days but the patient made a good recovery.

In commenting on the cases Pinard draws attention to the fact that the inverted uterus escaped from the vulva between the patient's thighs in the first case. On examination the surface of the tumour gave evidence of its gangrenous condition, hence the selection of hysterectomy.

In the second case, though the condition had been present for a longer time, the mass had never protruded from the vulva. The mucous membrane was of a normal colour and the uterine wall fairly firm throughout. There was neither infection nor gangrene present; hence the adoption of the more simple method of treatment. He believes that in such conditions these bags have a more efficacious action than the other means usually recommended.

Slough of the Uterine Wall.

VINEBERG, HIRAM N. "Partial Hysterectomy ? for Puerperal Sepsis." *Amer. Jour. of Obstet., Sept., 1901.*

The following interesting case is reported by Dr. Vineberg. The patient, aged 22 years, a few days subsequent to a miscarriage of the third month, was attacked with high fever and pain in the right iliac region. Bimanual examination revealed a large and rather tender uterus with moderate fulness of the left broad ligament. These symptoms persisting for ten days the abdomen was opened. The left ovary was found enlarged, œdematous, and firmly adherent to the posterior aspect of the left cornu and fundus. On detaching the ovary from the uterus some thick pus escaped from the tissues of the uterus. On examination a slough in the fundus the size of an English walnut was located looking like an ordinary carbuncle. It was excised thoroughly and the wound touched with pure carbolic acid. The patient made a good recovery and has since been delivered of a child at full term.

The author, in commenting on the case, considers that it is important to differentiate a localized slough of a portion of the uterus from the uniformly infected organ of puerperal sepsis. He considers that the diagnosis can only be established by opening the abdomen. If the former condition is found the slough may be excised, but in the latter the organ should be totally removed or else left alone.

Cæsarean Section and the Indication for Craniotomy.

De Lee, Joseph B. "Three Cases of Cæsarean Section and a Considation of the Indication for Craniotomy." *Amer. Jour. of Obstet., 1901.*

In the first case delivery by the natural passages was impossible on account of general contraction of all the diameters and asymmetry of of the inlet of the pelvis. The child was at full term and larger than normal. The patient was in the first stage of labour with the membranes intact. The patient and her husband selected the Cæsarean operation after all the facts had been laid before them. Mother and child left the hospital after the twenty-fourth day.

In case two there was a generally contracted, flat, rachitic pelvis with a conjugate of 7.5 c.m., the lateral diameters being decidedly contracted. After thirty hours the head failed to engage and she was removed to hospital, on reaching which the fœtal heart tones were found to have disappeared and there was external hæmorrhage. Axis traction was unsuccessfully attempted. Craniotomy was then performed, and the patient made a good recovery.

A year later the patient entered hospital, being again about term. At the onset of labour she insisted on the Cæsarean operation, which was successfully performed, both mother and child leaving the hospital in good condition.

In the third case, a IV-para, aged 37, a large semi-solid tumour, springing from the left sacro-iliac joint, completely obstructed the pelvic cavity. The child presented by the breech. Three attempts at taxis had failed before the author saw the case. The patient was in poor condition, but extraction of the after coming head on craniotomy being considered inadvisable, it was determined to perform a Porro operation with intraperitoneal treatment of the stump. The child was delivered alive, but the mother died on the fourth day from sepsis.

Dr. DeLee then considers the question of craniotomy from the standpoint of religion, sentiment, and humanitarianism, with which aspects of the question the physician has, in his opinion, nothing to do, these being left to the consideration of the husband, family or community.

With regard to the legal side of the question, he points out that, in the eyes of the law, the child is *pars viscerum*, an integral part of its mother, being only severed from her at birth. This principle apparently gives the woman a right to say what shall be done with the child when her life is endangered by it, as if it were a neoplasm. Thus the mother has the right to preserve herself at the expense of the infant, and may morally, sociologically, and legally refuse to incur a little danger for the sake of her infant. The physician, therefore, is bounden to abide by her decision or that of her representative; and it is his duty to disclose the situation fully and impartially.

Considering the medical side of the question, he quotes the views of several authorities, and says that in his opinion Professor Cameron gives the most rational view of the situation when he says that "at present it is premature to say that embryotomy is never justifiable; that Cæsarean section and embryotomy are seldom pitted against each other as electives, and when they are, Cæsarean section is generally the choice; when they are the last resorts, embryotomy is usually the choice."

He points out that craniotomy is now an operation with a mortality of zero as far as the mother is concerned. He considers that "when the patient has been in labour more than twenty-four hours, when she is presumably infected, when operations have been attempted by unskilled hands, Cæsarean section and symphysiotomy should be prohibited; the child should be sacrificed."

Abdominal Hysterectomy for Puerperal Infection.

Demelin and Jearmin. "A Case of Puerperal Infection from Intra-uterine Fœtal Putrefaction, Abdominal Hysterectomy, Cure." *Bull. de la Soc. d'Obstet. de Paris, Nos. 5, 6, 1901.*

The patient, aged 37, an VIII-para, entered hospital in labour. The membrane had been ruptured for two days. The abdomen was tense and distended. On palpating the uterus crepitation was obtained. The child, presenting by the breech, was dead. Descent was arrested in the pelvic cavity. During extraction of the child quantities of offensive gas escaped from the vagina along with a putrid discharge. The placenta was green and necrotic. Delivery was followed by intra-uterine douching with peroxide solution. Four days later the patient was in a profoundly septic condition, chills, high temperature, rapid pulse, accompanied by bad facies in spite of curettage and frequent intra-uterine douching. Under ether anæsthesia, after disinfection of the genital tract and skin of the abdomen, an abdominal hysterectomy was performed with the patient in the Trendelenburg position. A mesh of gauze was passed from above into the cavity of the vagina.

The patient made a good recovery and left the hospital three weeks after operation. Cultures were taken from the uterine cavity at the time of labour, and from the uterine wall just below the peritoneal covering at the time of the operation. The cultures proved extremely rich in anaërobic bacteria, practically no aërobic bacteria being present. A bacillus and streptococcus tenuis predominated.

The reading of this paper led to a long and interesting discussion on the place of hysterectomy in the treatment of puerperal infection. The general opinion seemed to be that local treatment, curettage, douching, etc., gives on the whole better results. Cases recovering after hysterectomy are the exception rather than the rule, Tessier's figures showing 18 deaths out of 20 cases operated on in Paris. It was conceded that in cases of localized gangrene of the uterue, hysterectomy might prove successful; but the difficulty remains of diagnosing this condition.

D. J. Evans.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in the department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

Received up to February 10th, 1902.

The Canadian Journal of Medicine and Surgery.

January ,1902.

1. National Physical Development. J. N. Hutchison.
2. Address to the Graduating Class of the Training School for Nurses, Toronto General Hospital. A. Primrose.

February, 1902.

3. Treatment of Laryngeal Tuberculosis. J. Price-Brown.
4. Chronic Ulceration of the Stomach Simulating Cancerous Disease, Relation of a Case of Gastro-enterostomy with Murphy Button, Recovery. J. F. W. Ross and E. B. O'Reilly.
5. Vaccinal Protection against Small-pox. P. H. Bryce.
6. Is Vaccination What it Should Be ? A. J. Harrington.

1. HUTCHISON discusses the causes which have produced, and are producing, an alarming degeneracy in a large portion of the population. To produce a strong race, physically and mentally, we must have healthy mothers, and he points out that the present system of education does not recognize the peculiar demand for growth and development of the reproductive organs or the establishment of their periodical function. He advocates intermittence, periodicity of exercise and rest; work three-quarters of each month and remission, if not total abstinence, the other fourth, with physiological interchange of the erect and reclining postures. There should also be given by duly qualified practitioners lectures to boys and girls about the age of twelve on the subject of sex. The great causes of degeneracy are alcoholism, syphilis, tuberculosis, epilepsy and insanity, and to a certain degree gonorrhœa. The only rational solution of the problem to check the degeneration of the race is to deny the right of marriage to these de-

fectives. If their disease be curable, they have no right to remain a source of danger to mankind, and if they are incurable, they have no right to perpuate their infamy or weakness. It is in accordance with the spirit of medicine, it is, in fact, self-defence.

3. PRICE-BROWN describes the various methods that have been employed in the treatment of laryngeal tuberculosis, and advocated the use of intra-tracheal injections, from the fact that they are applicable both to pulmonary and laryngeal disease. He employes 1 to 2 per cent. of menthol in albolene, the amount injected varying from 4 to 8 c.c., repeated every one or two days. The injections may be given without using cocaine at all, as the patients scarcely feel the entrance of the fluid, but towards the latter part of the inhalation, the contact of the oil within the bronchial tubes produces a slight cough, though of only slight duration.

4. ROSS and O'REILLY report a case which illustrates the difficulty of making a differential diagnosis between chronic ulceration and cancerous disease of the stomach. The patient, a woman of 28 years, presented all the signs of severe gastric disease, she was extremely emaciated, had rigidity of the right rectus muscle and an indefinite thickening in the epigastric region. The symptoms pointed to obstruction of the pyloric end of the stomach, and it was not possible to say whether this obstruction was due to the presence of cancerous growth or to some other cause. The symptoms had extended over such a period that they pointed to the presence of an ulcer, but the thickening led to the belief that malignant disease had been grafted on the former condition of ulceration. The abdomen was opened and the stomach drawn out. A large growth was found at the pyloric end. The perigastric lymph glands were enlarged, and the whole stomach wall looked exactly as it does in cases of cancer. The case was looked upon as hopeless and gastro-enterostomy was performed with Murphy's button. The patient made an uninterrupted recovery and twelve months afterwards was the picture of health, her gastric symptoms had completely disappeared, and there was no mass to be felt in the abdomen.

Dominion Medical Monthly.

January, 1902.

1. Tuberculosis of the Skin. Graham Chambers.
2. Report of the Physician-in-Charge, Muskoka Cottage Sanitarium. J. H. Elliott.

Canada Lancet.

January, 1902.

Tuberculosis Number:—

Etiology and Early Diagnosis of Pulmonary Tuberculosis. D. Gilbert Gordon.
Acute Military Tuberculosis. James Third.
Tuberculosis of the Pelvic Organs in the Female. Thos. S. Cullen.
Tubercular Disease of Bones and Joints. Hadley Williams.
Tuberculosis of the Alimentary Tract. R. J. Dwyer.
Genito-Urinary Tuberculosis. Geo. A. Bingham.
Glandular Tuberculosis. Herbert A. Bruce.
Tuberculosis of the Larynx. J. Gibb Wishart.
Tubercular Disease of the Middle Ear. Charles Trow.
On the Disposal of Tuberculous Sputum. J. H. Elliott.
Relations of the Tuberculous and the Public. J. T. Fotheringham.
Tuberculosis—Some Needed Regulations. John Ferguson.
Statistics of Tuberculosis in Canada. Charles P. Lusk.

L'Union Medicale du Canada.

Janvier 1902.

1. Les Sinusites Aiguës. R. Boulet.
2. L'Approvisionnement de Lait de la Ville de Montréal. J. E. Dubé.
3. L'Œuvre de la Goutte de Lait. S. Boucher.

1. Boulet contributes an exhaustive article on the symptoms and various methods of treatment of suppuration in the accessory cavities of the face.

2. Dube describes a plan that has been suggested for the improvement of the milk supply of the city of Montreal. To every deserving milk dealer who asks for it, will be given a coloured card with the arms of the city and the words:—" Certified Milk," with the name, address of the dealer, and the number of the license upon it. Before this can be obtained the stables, the animals, the food and water for the cows, the utensils for holding the milk, the dairies, the method of carriage and delivery, are all rigidly inspected. The writer quotes, at length, from the *New York Medical Journal,* upon the work of the committee who investigated the best means of obtaining good milk supply for the city of New York.

3. Boucher gives the statistics of the milk dispensary that under the name of " L'Œuvre de la Goutte de Lait," has been supplying a suitable milk for babies since July 5th last. From that date to the

24th of November, 40,372 bottles, representing 12,073 pints of milk, and 1,269 pints of gruel, were distributed to 155 infants. The milk is collected with every care and modified to suit the different infants. Those who can pay for the milk do so, but the very poor are supplied free of charge. A pamphlet entitled "Hygiene de la Première Enfance," had been prepared and distributed to those who attended the dispensary. The writer considers that the work has been a great success, and hopes that it will be extended.

Le Bulletin Medicale de Quebec.

Janvier 1902.

1. Méningite Pneumonique. Thomas Savary.
2. De l'Apomorphine contre les Attaques d'Hystèrie, d'Hystèro-Epilepsie et de Epilepsie. P. V. Faucher.

1. Savary reports a case of pneumonia complicated with meningitis.

2. Faucher considers that the administration of apomorphine hypodermically is one of the most valuable remedies for epilepsy, hystero-epilepsy, but above all for hysteria. The prick of the needle, the vomiting, and the subsequent depression has a marked effect upon the nervous system. Several cases are cited in which it was used with great success.

La Revue Medicale.

1 Janvier 1902.

1. Analgesie Obstetricale par la Cocaine en Injection Spinale de la Région Lumbaire. J. C. S. Gauthier.

8 Janvier 1902.

2. Une Nouvelle Position pour l'Examen Gynécologique. M. T. Brennan.
3. Rapport d'une Cas d'Anevrisme Arterioso-Veineux à l'Hotel-Dieu. D. Hingston.

15 Janvier 1902.

4. Un Cas d'Hydrosalpinx. François de Martigny.

1. Gauthier urges the use of spinal anæthesia by means of cocaine during the later stages of labour. Experience shows that women who have been delivered after having received a spinal injection of a centigramme of cocaine offer less resistance to general anæsthesia, the soft parts are less liable to rupture, the uterine contractions are more vigorous and more frequent, the dangers of hæmorrhage from uterine inertia

are reduced to a minimum, and involution is more complete. He quotes the observations and statistics of Doleris upon the subject.

2. BRENNAN describes with an illustration, a new gynæcological position which he has employed with the greatest advantage. The patient sits in a position varying from an angle of 45 degrees to almost vertical. The seat rests upon a support, the legs are flexed upon the thighs and the thighs upon the abdomen, the lower limbs resting upon leg-supports. In this position there is complete relaxation of all the abdominal and pelvic muscles and of the lower limbs. To obtain the position, attachments can be easily made to an ordinary chair or to the examining table.

3. D. HINGSTON reports a remarkable case of thoracic aneurism. A man had been suffering from severe pain in the region of the 12th dorsal and 1st lumbar vertebræ. Symptoms pointed to psoas abscess, and an incision was made above the iliac crest, and an inch behind the axillary line, when the operator came upon a mass of coagulated blood, and the patient died the scame night of hæmorrhage. At the autopsy, just under the diaphragm was found an arterio-venous aneurism of the aorta and a large vein situated on the right side of the vertebral column probably the displaced vena cava. The last dorsal and first lumbar vertebræ were eroded, and formed the posterior wall of the aneurismal sac. There were large hæmatomata beneath the sheath of the psoas on the right side and in the substance of the muscle on the left side. The communication between the psoas muscles and the aorta was made through the insertion of the muscles into the carious vertebræ.

Reviews and Notices of Books.

Syphilis and Other Venereal Diseases. By H. de Meric, M.R.C.S.E., Surgeon to the French Hospital, London, etc., etc. London, Bailliere, Tindall & Cox, 1901. Demy Octavo, 132 pages. Price, 3 shillings net.

The author gives a somewhat curtailed statement of his views on syphilis, gonorrhœa and other venereal lesions. He thinks soft or simple chancres are always multiple and that hard chancres are often single. The pathology of the soft and hard sore is discussed and an effort made to account for the peculiarities of each variety. It is admitted that a differential diagnosis is sometimes most difficult. In the treatment the author recommends mercury for syphilis and iodide of potassium for the effects produced by syphilis. Yet, while this general rule is given, it is at the same time pointed out that the iodide is under certain circumstances a most useful adjunct in syphilis. The proto-iodide is generally preferred. Inunctions and hypodermic injections of mercury are reserved for use when a rapid effect is desired. The book deals with a most important and useful class of diseases and for that reason is worthy of perusal. *G. E. A.*

A Text-Book of Obstetrics. By Barton Cook Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania. Third Edition, thoroughly revised and enlarged. Philadelphia and London, W. B. Saunders & Co., 1901. Canadian Agents, J. A. Carveth & Co., Toronto, Ont. Price, cloth, $5.00 net.

The fact that a third edition of Hirst's Obstetrics has been necessitated in the short interval that has elapsed since the first appearance of the work three years ago, is ample evidence that the author has produced a most acceptable and valuable treatise on the subject. The third edition gives evidence throughout of very complete and careful revision. Additional matter has been added to nearly every chapter without materially increasing the size of the book. One notes the employment of the decimal system in this edition, in every instance both methods being given.

In the chapter on the diagnosis of pregnancy a valuable addition is that dealing with the differential diagnosis of pregnancy from other tumours of the abdomen. The illustrations here are particularly satisfactory. In the chapter on puerperal sepsis one notes that Dr.

Hirst considers the bacteriological examination of the uterine contents in these cases, while being of interest, of little practical value from a diagnostic point of view.

The author's remarks on the serum therapy of puerperal sepsis are very interesting, as he has evidently given the subject most careful consideration. His final judgment is against it; and he states that he has discarded it "after a personal trial extending over three years and embracing some twenty cases."

The literature of obstetrics has been carefully reviewed and the most important references since the last edition have been added to this. More than 50 new illustrations, including three coloured plates, have been introduced. All that was said in favour of the first edition in these columns can be applied with added emphasis to this revised edition. *D. J. E.*

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Fifth Edition, Thoroughly Revised. Octavo, 1297 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Co., Canadian Agents, J. A. Carveth & Co., Toronto, Ont. Price, $5.50 net.

This is one of the most popular of the American text-books, as evidenced by the fact that it has gone through five large editions in less than four years. In the present volume the information has been kept well up to date. The most thorough changes have been made in the group of infectious diseases. The articles on malaria and yellow fever have been revised in the light of the recent researches of Ross, Manson, Carroll and Reed, in regard to the transmission of these diseases by the mosquito. The illustrations are mostly good and the numerous diagnostic tables are of distinct value. The style is on the whole pleasing, although here and there it might be more lucid.

What strikes one most is a certain fussiness, so to speak, in regard to the conditions discussed and their classification. Thus, for instance, sections are given upon cardiac thrombosis, intestinal infarction, streptococcus pneumonia, fatty degeneration of the liver, bovine tuberculosis, interlobular emphysema, hæmorrhage into the mediastinum; conditions which with more propriety might have been relegated to works on pathology, inasmuch as they can hardly be susceptible to clinical diagnosis. It is scarcely necessary, either, to make special sections for pneumonia and secondary pneumonia. Besides this there are certain vagaries of classification. Chronic articular rheumatism is classed under "Infectious diseases of unknown etiology," "Glass-blower's mouth" is discussed under "Diseases of the salivary glands."

Large white kidney and "secondary" or fatty and contracted kidney are classed together when they might with advantage have been treated separately.

Certain opinions are given which are open to serious question. Thus a quotation from a text-book upon the pathogenic bacteria is introduced on the subject of the transmissibility of tuberculosis, that "the bovine bacillus infects animals, and probably also man, with great readiness." The latter portion of this statement will hardly be admitted by most pathologists. The propriety of introducing prescriptions into a work of this class is open to discussion, but it seems to us that all that is necessary is to indicate the broad lines of treatment, leaving the finer details to special works on therapeutics. Any other course is liable to inculcate a too implicit reliance on drugs and to render the volume unnecessarily bulky.

Apart, however, from these objections, which are perhaps after all mere refinements, the work is a very readable one and, from the wealth of information and experience afforded, thoroughly deserves its popularity. *A. G. N.*

THE PRINCIPLES OF HYGIENE. A Practical Manual for Students, Physicians and Health Officers. By H. D. BERGEY, A.M., M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Philadelphia and London: W. B. Saunders & Company, 1901. Canadian Agents, J. A. Carveth & Co., Toronto. Price, cloth, $3.00 net.

Dr. Bergey has given us a text-book which is both valuable and readable, not too common a combination. The arrangement of the contents can be judged from the relative amount of space allotted to the various branches of the subject, *viz.*, air 5, ventilation 4, heating 2, water 7, sewage 5, garbage 1, food 12, exercise, clothing and personal hygiene 4, industrial hygiene 4, schools 4, military 4, naval 3, habitations 2, infectious diseases 8, disinfection 5, quarantine 16, and statistics 2.

The subject matter is well brought up to date, recent reports of commissions and special public health committees being often cited instead of the views of individuals, and in place of the author's personal opinions. It is not clear why one-sixth of the total volume should be devoted to giving the full text of the United States quarantine laws and regulations. This method is not followed in such matters as the regulation of schools, dairies, prisons and industrial establishments, in all of which the regulations might be introduced into local public health by many of the readers of the book. It falls to the lot of comparatively few to introduce an entire system of national quarantine.

The tables and illustrations are well selected and executed and the letter press clear. It should occupy in relation to American text-books on hygiene a position similar to that of Wilson's well known English text-book, which it resembles in scope and method of treatment.

W. J.

The Peritoneum. By Byron Robinson, B.S., M.D., Chicago, Ill. Author of "Practical Intestinal Surgery," "Landmarks in Gynæcology," etc. Second Edition, Part I. Histology and Physiology, With 247 Illustrations. Chicago, Chicago Medical Book Company, 1899.

The author has collected the results of a great many of the foremost research men and placed them before the reader in this volume in a very plain and simple style. This is not all, however; Dr. Robinson has himself done a great deal of original work on the abdomen and peritoneum. He is, therefore, in a position to discuss opinions and views on the histology and physiology of the peritoneum.

A short chapter entitled "Historical Sketch" is most interesting and outlines the gradual evolution of our present knowledge of this important tissue. Then follow in order chapters on the "endothelioma of the free peritoneal surface, sub-peritoneal tissue, blood-vessels of the peritoneum, lymphatics, nerves and physiology of the peritoneum." One can hardly enter into a detailed criticism of these chapters, but it can be said that they all give evidence of care in preparation; they are all instructive and interesting. The volume closes with a chapter on technique.

The book deals with a most important tissue. It throws light upon the physiological and pathological processes of the peritoneum with which all medical men are concerned, and it is to be highly recommended to our readers. *G. E. A.*

A Treatise on Surgery. By American Authors; for Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo. Third Edition, enlarged and thoroughly revised. Lea Brothers & Co., New York and Philadelphia, 1901.

The demand for a third edition two years after the second is certainly complimentary to the authors. Among the list of contributors are such names as Maurice H. Richardson, C. S. Bull, Bradford, Burrell, Matas, Nancrede, Bevan, Parmenter, and Roswell Park, the editor. These names are a guarantee of quality. The matter as a whole is good and well arranged. Due importance is given to bacteriology and the development of the subjects of auto-intoxication and the sequelæ of non-surgical diseases. The chapter on the surgical pathology of the blood is carefully written and may be said to fairly express the present knowledge on this important subject.

On some subjects the matter is open to criticism. One might reasonably expect a more full, concise, and detailed account of the recent work done in the treatment of lupus and cutaneous epithelioma with the Finsen light and the Rœntgen rays. In the treatment of fractures, too, but little space is given to the employment of massage with or without immobilization, as advocated particularly by Chaponnier. The book is well printed and well illustrated. *G. E. A.*

American Text-Book of Pathology for the Use of Students and Practitioners of Medicine and Surgery. Edited by Ludwig Hektoen, M.D., Professor Pathology, Rush Medical College, and David Riesman, M.D., Professor of Clinical Medicine, Philadelphia Polyclinic; 443 illustrations, of which 66 are in colors. Philadelphia and London: W. B. Saunders & Co., 1901. Canadian Agents, J. A. Carveth & Co., Toronto, Ont. Price, $7.50.

No such full text-book of pathology as this has as yet appeared in the English language, and on the whole the work is deserving of very high commendation. As the editors say in the preface, pathology has made such enormous strides in recent years that it is almost an impossibility for one man to make himself fully conversant with an entire full knowledge of this important branch of science. We go farther and say that it is a complete impossibility for one man to be fully conversant with the whole subject. Thus, wisely, this work has been distributed among some nineteen contributors. The introduction is written by Professor Lewellys F. Barker, now of the University of Chicago, and is so clear and so judicial that we wish it had been much longer, more especially as it contains the only general paragraphs upon the causation of disease. Dr. Hektoen, the editor, discusses the general morbid processes and it is needless to say that this portion is thoroughly up to date. Dr. Ohlmacher is responsible for the chapter on tumours, and this subject is so large and important at the present time that, although some 60 pages are taken up in this consideration, we cannot help feeling that even more space might have been given to it. What is said is put in a very conservative and cautious manner. The same author is also responsible for the pathogenic micro-parasites and gives a very clear account of these organisms. We cannot help feeling now that pathogenic bacteriology has become so specialised a subject, that a description of these organisms should not be included in the ordinary text-book of pathology, the most to be given being a general discussion of the effects of bacteria in setting up one or other form of disease. Nevertheless, we welcome the chapter upon pathogenic protozoa, in which a most valuable summary of our knowledge of the sporozoa, including the organism of malaria, is to be found in very clear language. Professor L. J. Mitchell, of the University of Illinois, treats briefly but clearly of the animal parasites, while the chapter upon intoxications has wisely been given to Professor Victor C. Vaughan, of Ann Arbor, and forms a most authoritative discussion on this subject. Professor Carter, of the University of Texas, discusses the general pathology of fever, and Dr. H. T. Lewis, of Chicago, has an interesting and well-written chapter upon teratology.

Coming now to special pathology, the article upon the blood is by Dr. R. C. Cabot, of Boston; it is needless to say that this is well and authoritatively written. Dr. A. A. Stevens, of Philadelphia, contributes the chapter upon the circulatory system, which is admirably illustrated. The nervous system is taken by Dr. Joseph Collins. We have, however, not been able to study this completely, but so far as we have seen it, it appears to us to afford a very adequate, if condensed, account of the main pathological facts at present in our possession. The article on bones is again contributed by Professor Hektoen, while that upon the muscles, tendons and bursæ, is from the hand of Professor Warthin, of Ann Arbor. Dr. A. G. Nicholls, of Montreal, contributes a chapter upon the digestive system, and by dint of very considerable condensation, Dr. Nicholls has managed, not merely to give the main details of the special pathology of the alimentary canal, the liver and pancreas, but to preface each section with a useful outline of what it is now the fashion to term pathological physiology, of digestion and the digestive organs. What strikes us as particularly good is his study of the pathology of appendicitis, of pancreatic disorders, and of cirrhosis of the liver. Professor McFarland, of Philadelphia, deals with the respiratory system; Professor Hektoen, with the ductless glands; Professor Riesmann, the other editor, has a well-written and well-illustrated article on the urinary organs. Other sections upon the female genital tracts, the breasts, skin, the eye and the ear, are from the pens of H. D. Beyea, of Philadelphia, J. Collins Warren of Harvard, F. H. Montgomery, of Rush Medical College, Ward A. Holden, of New York, and Jas. A. Spalding, of Portland, Me., respectively. Although the book is of large size, with no less than 1,245 pages, yet, when each section is studied, it is found that in order to give the leading facts in regard to each organ, there has been extensive condensation. But I have little doubt that the work will take its place as an indispensable text-book for those on this Continent who desire more than a mere outline of the facts of pathology.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,
A. D. BLACKADER,
GEO. E. ARMSTRONG,
WILLIAM GARDNER,
F. G. FINLEY,
JAMES STEWART,
J. GEORGE ADAMI,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. FEBRUARY, 1902. NO. 2.

THE RETIREMENT OF DR. ROBT. CRAIK.

It is with sincere regret that we announce the retirement of Dr. Robert Craik from the Deanship of the Medical Faculty of McGill University. Dr. Craik succeeded the late Dr. R. P. Howard at the latter's death in 1889, and has thus held the position for more than eleven years—eleven years of uninterrupted progress and prosperity, due in no small measure to his administrative ability, indefatigable energy and careful supervision. His heart was always in his work. During Dr. Craik's term of office many reforms and improvements have been instituted; the course has been lengthened and many new subjects have been introduced, the buildings have been enlarged, and especially have commodious laboratories been added for State medicine, pathology, histology, physiology and pharmacology.

The opening last autumn of the new buildings given by members of the family of Lord Strathcona was a fitting close of a most successful, progressive and eventful administration. Dr. Craik's last public act as Dean was to read an address at that Royal function, giving a short history of the Faculty, before the Prince declared the new buildings open.

Although Dr. Craik has left the Faculty, his interest in it is still active and his appointment as one of the Governors of the Royal Institution will enable him to influence in no slight degree the future conduct of the Faculty.

To his successor, Professor T. G. Roddick, M.P., we offer our congratulations, and we feel sure that under his guidance the cause of medical education will be much promoted and the Medical Faculty of McGill University will be known in the future as in the past as a progressive institution.

THE CANADIAN FIELD HOSPITAL.

The 10th Field Hospital, Canadian Army Medical Corps, sailed on the S.S. Victorian for Cape Town under the command of Lt.-Col. A. N. Worthington, a graduate of McGill University, who has already earned credit and distinction as surgeon to the Brigade Division of the Royal Canadian Artillery, which served in Africa in 1900. Its other officers are men who have had some experience in the Canadian Army corps, and their position in the profession coupled with the prevailing good class of the non-commissioned officers and men, is a very hopeful indication of the work that the hospital will perform.

Apart from the political aspect of the case it is a good thing that, side by side with regiments for service, Canada should send a representative of the medical corps. We not only give service thereby but we obtain an education which we can get in no other way. It is an unequalled opportunity that Canada along with the other colonies has had, whereby she has been enabled to give practical war experience to some thousands of men, who should be a considerable leaven to her militia; and the Canadian Army Medical Corps should be a gainer because of a number of medical students in the ranks of the 10th Field Hospital, who, returning after a year's experience, should be able to hold commissions with credit and advantage to the service.

It is to be hoped that the equipment will be in all points an efficient one. To outfit the hospital with Canadian waggons was undoubtedly a good move. In point of endurance and lightness the American waggon is ahead of all waggons, and the British ambulance is the clumsiest vehicle known to modern times. An attempt was made to supply an X-ray machine, but a suitable one could not be obtained, and the hospital's efficiency is not lessened by its absence as there is not the least likelihood that they could have carried it on the field.

A number of Canadian nurses have also been despatched by way of England; the majority of the six or seven sent were in Africa with the First or Second Contingents, and made an excellent name for themselves. Of course it will be understood that they, like all the Army

Nursing Sisters, are employed at the base hospitals and at no time are allowed with any of the field hospitals or bearer companies in the actual field of battle.

To the unitiated it may be stated that the field hospital and the bearer company are two separate units which work in conjunction; "first aid" falls to the bearer company, all the subsequent treatment to the field hospital until the latter can hand over the patient to the base hospital, which is a large permanent institution capable of treating as many as 1,500 patients. It has hundreds of tents, an ample staff of surgeons and nurses, and is situated in almost all cases close to the railway line.

Perhaps the most efficient of all field hospitals in the war have been those sent by Australia. Officered by surgeons of more than average ability, manned by an excellent class, they have again and again called forth favourable comparison with the Imperial hospitals, and there is no doubt that our field hospital, now on service, can be depended upon to make for itself a reputation as good as theirs.

THE JOURNAL OF OBSTETRICS AND GYNÆCOLOGY OF THE BRITISH EMPIRE.

We most heartily welcome the first number of this new journal. It is now twenty years since, after the issue of eight annual volumes, the Obstetrical Journal of Great Britain and Ireland, died a natural death. Since then, in the whole British Empire, there has not existed more than a single special journal devoted to obstetrics and gynæcology, while in Germany and France, besides other European countries, numbers of such periodicals have for many years thriven. Besides the larger journals, such as the *Archiv, Zeitschrift,* and *Monatschrift,* Germany has supported for a considerable time the very flourishing weekly *Centralblatt.* Such a state of things as just alluded to has many times been felt to be most discreditable to British medicine. Hitherto, save in the *British Gynæcological Journal* and the *Transactions of the Obstetrical Society of London,* the authors of papers and other communications have had to resort to the general medical journals to appear before the profession.

The new journal is edited by Mr. Alban Doran, aided by Drs. Berry Hart, F. W. Kidd, and W. J. Sinclair, and there is a representative editorial committee of some of the most prominent gynæcologists of London, Edinburgh, Dublin, Glasgow and Birmingham. Besides these names, there is a long list of collaborators representing every important city and town in the empire. The list for Montreal includes Drs. William Gardner, J. Chalmers Cameron and F. A. L. Lockhart.

The first number contains a most interesting and valuable list of papers, by Drs. Cullingworth, Peter Harrocks, and Professors Sinclair and Murdock Cameron. Dr. Berry Hart appears in a paper which he entitles "Obstetrics at the beginning of the Twentieth Century; an Attempt at an Appreciation." This is a most interesting historical review of progress in obstetrics during the last century. Dr. Arnold W. W. Lea furnishes "A Critical Essay on Anæsthesia by Subarachnoid Injections of Cocaine in the Lumbar Region; its use in Gynæcology and Obstetrics." This paper will be a valuable guide in this matter as the experience of a great variey of workers, Continental, European and American, is drawn upon to throw light upon the subject. A full and interesting review of current literature, bearing on obstetrics and gynæcology and one book review, close the number.

The vacancy in the position of Assistant Laryngologist to the Montreal General Hospital has been filled by the election of Dr. George K. Grimmer, after a very close contest, three good men having applied for the position.

Dr. Grimmer is a native of St. Andrews, New Brunswick, and obtained his early education at the University of New Brunswick at Fredericton, where he graduated B.A. in 1887. After graduating M.B., C.M. at Edinburgh University in 1892, Dr. Grimmer spent six years in general practice before taking up the study of Laryngology. Since that time he has devoted himself exclusively to the study of his specialty. In 1900 he received the degree of F.R.C.S.E., and in 1901 on presentation of a thesis the degree of M.D. with honours from Edinburgh University.

GRADUATE MEMBERS OF THE ALPHA DELTA PHI FRATERNITY.

G. E. Bayfield, M.D., '98, who has been practicing in Annapolis for the last three years has settled in Portage la Prairie.

H. M. Kinghorn, M.D., '94, is practicing in Saranac Lake where for a time he had charge of the Adirondack Cottage Sanitarium.

W. W. Lynch, M.D., '98, is practicing at Sherbrooke, P.Q.

L. N. Murray, M.D., '00, is settled in Halifax, N.S.

R. R. A. Shore, M.D., '99, has returned from London, where he took his M.R.C.S. and L.R.C.P. degrees, and has settled in Toronto, Ont.

T. F. Bayfield, M.D., '01, is Assistant House-Surgeon in the St. John General Hospital.

R. U. Patterson, M.D., '98, has joined the United States Army Medical Service and is now stationed at Fort Meyer, Washington.

Proceedings of the McGill Medical Society of Undergraduates.

LONGEVITY.

BY

D. W. McKechnie, '03.

Longevity is a term that may be used to express either the length of life of any organism or the prolongation of life to an advanced age. Of these two meanings the first is the more scientific, since it may be applied to the duration of life, although that duration may be relatively short; for example we may contrast the longevity of the mould, which lives only a few hours with that of the forest tree, which survives centuries; on the other hand the second meaning is the more common as when very advanced age is spoken of as an example of great longevity.

Our information regarding the natural duration of life in the lower forms of plants and animals is very limited, and it can scarcely be asserted that here there is a natural period of life. A simple organism composed of cells, or even one more complicated but still having the vital organs constructed upon a simple type, may continue to live and grow so long as external conditions are favourable. The tissue of the organism shows no tendency to decay and life is prolonged until a change in external conditions so affects the processes of nutrition as to make the continuance of life impossible.

Leaving out the lower forms of plants, the duration of whose lives we know nothing, the higher plants may be classed into annuals, which grow up in spring and die in autumn, biennials, which die at the end of the second year, and perennials which may last from four to thousands of years. It is interesting to note that strongly scented plants have often a longer duration of life than those destitute of smell, also that soft-wood trees like the fir, birch, and horse-chestnut, grow rapidly and have a comparatively short life, while hard-wood trees, such as the oak, maple and hickory, grow slowly but live long.

According to Hufeland, a distinguished German physician and writer on medical subjects, the chance that a plant has of attaining a great age, depends on the following conditions:—

It must grow slowly, it must propagate slowly and late in life, it must have a certain degree of solidity and hardness, it must be large and have a considerable extent of surface, and finally, it must rise well into the atmosphere.

In the animal kingdom, there is great variety as regards the duration of life, but no very accurate data have yet been collected; however, it is highly probable that cold-blooded animals such as fishes, frogs, toads, etc., in which tissue change goes on with extreme slowness, may live for many years. Pike and carp have been ascertained to live 150 years, the tortoise 100 years, and it is said by natives of India that the crocodile may live at least 100 years.

Amongst mammals, the elephant is supposed to attain the greatest age, reaching above 100 years, the camel generally lives to 50 years, and may reach the age of 80, the horse does not live more than 40 years, the deer 30 years, and the ox 15 to 20 years.

Prof. Owen is the authority for the statement that in many cases certain relations undoubtedly exist between the degree of longevity enjoyed by an animal and the time of its development in utero, but to this statement there are, of course, many exceptions. Again, it would appear that the sooner an animal attains maturity, the sooner it propagates, and the shorter will be the duration of its life. The reproductive act may be regarded as the culminating act of the organism, requiring the highest degree of vitality and involving the largest expenditure of energy; this act will therefore be performed when the organism has reached maturity, which condition is reached in some animals later than in others, but in all, the period of maturity may be taken as about a fifth part of the whole duration of life.

The question of longevity, however, probably presents the greatest interest in its relation to man. It is still a popular belief that the earliest inhabitants of the world possessed an incredible strength, were of an enormous stature, and lived to a very great age. The ages of the patriarchs before the flood are often taken literally, although the conditions making such long lives possible are at variance with those of human existence at the present day.

In ancient history, there are instances given of heroes who attained the age of several hundred years, but these must be regarded as mythical; however, the following cases of extreme longevity have been placed on record:—Margaret Patten, 137; the Countess of Desmond, 145; Thomas Parr, 152; John Rovin, 172; and Peter Torton, 185. There can be little doubt that the ages of these persons have been exaggerated, for they lived at a time when no accurate records were kept, and the dates of occurrences were fixed by comparing them in the memory with other events believed to have happened about the same time. Still they were instances of prolongation of human life far beyond the usual limits, and there is no reason for doubting that these persons lived till they were upwards of 100 years of age. Taking one case, that of Thomas Parr, who was said to be 152 years old at death, Hufeland in his "Art of prolonging life," makes the following interesting note:—

"Thomas Parr, a native of Shropshire, England, was a poor farmer's servant and obliged to maintain himself by daily labour. When 120 years of age, he married a widow for his second wife, who lived with him 12 years, and who asserted that during that time he never betrayed any signs of infirmity of age. Until his 130th year, he performed all his usual work and was accustomed even to thresh. Some years before his death his eyes and memory began to fail, but his hearing and other senses continued sound to the last. In his 152nd year, his fame had reached London, and as the King was desirous of seeing so great a rarity, he was induced to take a journey thither. This in all probability shortened his existence, for he was treated at court in such a royal way, and his manner of living was so totally changed, that he died soon afterwards at London in 1635. He was 152 years and 9 months old, and had lived under nine kings of England.

What was most remarkable in regard to this man was that, when his body was opened by the celebrated Dr. Harvey, his internal organs were found to be in the most perfect state, nor was the slightest symptom of decay to be discovered in them. His cartilages were not even ossified, as is the case in old people, and the smallest cause of death had apparently not yet settled in his body. He died merely of a plethora or excess of blood, which condition was brought about by his being too well treated."

The average duration of life in Europe, is about 35 years which falls far short of the possible longevity, a circumstance chiefly to be accounted for by the great mortality in the early years of life.

Laplanders live to an advanced age, men of from 70 to 90 years being common among them. The American Indians have apparently as long a life on the average as the white men, and it would appear to be the same in the case of the negro, although a census taken of the State of New Jersey, gave one negro centenarian in every 1000 of population, but only one white centenarian in 150,000.

The manner of life and nature of the occupation apart from hereditary and special causes have a most important influence on the duration of life. Few emperors or kings have attained the age of 80; and of more than 300 popes only six have exceeded 80 years. It would seem that brain work is not unfavourable to long life, it being almost proverbial that statesmen and judges often reach an advanced age.

Many men famous in literature and science have lived long lives, thus from 50 to 60 we have Tasso, Virgil, Shakespeare, Dante, Pope, Horace, and Demosthenes; from 60 to 70, Galvani. Aristotle, Milton and Rousseau; from 70 to 80. Dryden, Locke, Swift, Roger, Bacon and Charles Darwin; from 80 to 90. Thomas Carlyle, Plato, Gœthe, Franklin, Newton and Voltaire; and from 90 to 100, Sophocles, Michæl Angelo and Titian.

Physicians are often long lived as—Haller, Darwin, Jenner and Galen died between 70 and 80 years of age; and Harvey, Pinel and Margagin, between 80 and 90, while the father of medicine, Hippocrates is credited with 109 years.

The question naturally arises, what are the physiological conditions in the human being that determine longevity?

In the first place there is the influence of heredity. Certain peculiarities of tissue, transmitted from parent to offspring, determine whether or not that tissue will remain for a lengthened period of time in a normal condition, or whether it will quickly yield to external influences and degenerate. As the life of the body is really the sum of the lives of its constituent parts, or in other words, of the cellular elements composing it, it is evident that anything affecting the healthy action of these cells, will affect the life of the body as a whole.

So it is that in some individuals the tissues have, what may be termed an hereditary taint, and consequently they readily pass from a normal into an abnormal condition, which, of course, is unfavourable to longevity.

In the next place, even healthy tissues capable of resisting ordinary influences may be unable to resist long continued unfavourable conditions. In the course of time slow changes begin in these tissues, which will in turn affect the organ in which the tissue exists, and that organ by improperly performing its functions will bring about injury to the whole system.

Thus it is that habitually breathing an impure atmosphere, eating improper food, saturating the body with alcohol or with drugs, overexerting the nervous system by excitement or prolonged brain-work, and sexual excesses, debilitate the body by working slow but sure changes in the tissues, which will inevitably tell upon the longevity of the individual.

But even under the most favourable conditions, there seems to be a limitation to the healthy action of tissues, and old age comes on. Whether this is, or is not, the result of long hereditary transmission, is still a debatable question. However, it is a state of things all flesh is heir to, and if it be hereditary, as is highly probable, there is the satisfaction of knowing that such states can be slowly influenced by individuals living in the best possible conditions and transmitting the influences of good moral and physical hygiene.

Thus a race which has a low degree of longevity may acquire, by persistent attempts to live in the best conditions, a long average duration of life, and this is also true, though to a less extent, of an individual.

Each tissue has a life of its own, it is developed, reaches maturity, declines and dies. It may be replaced by successive generations of similar tissues, but its power of reproduction becomes weakened, and by slow degrees it may disappear or may become so altered as to be quite unlike what it was at first. By these tissue-changes, functional changes of great importance to the body are brought about. Thus, as age comes on, the blood becomes poorer, respiration is less active, the vital capacity of the chest, that is, the working quantity of air, is diminished ; the temperature of the body is slightly increased, so that the aged are more sensitive to cold ; the digestive organs are less vigorous; the walls of the arteries become hardened by earthy matter, and lose their elasticity; the veins become dilated, and the circulation is not efficiently performed; the teeth decay, and disappear; the cartilages become calcified and hard; the skin is shrivelled and dry and cutaneous respiration and excretion are less perfect; the hair whitens or falls out; and the stature and weight generally are diminished. By and by, muscular movements are less energetic and less precise, and there is a tottering gait. The cartilages of the larynx ossify, the vocal cords lose their elasticity and the voice becomes a shrill treble.

Then the involuntary muscular tissues are affected, so that the bladder is less powerful and peristaltic action of the stomach and intestines, feeble. The transparent media of the eye become dimmed, the near point of vision is pushed back so that the old become presbyopic or far-sighted, and the power of accommodation is entirely lost; the delicate mechanism of the drum and bones of the ear is impaired and deafness results.

Slowly the intellectual faculties become weakened, the emotions blunted, and the memory by degrees becomes less trustworthy, and at last vanishes. Much of the time is now spent in sleep and unless some intercurrent disease snaps the thread of life, there is a slow ebbing of existence into natural death.

In the first half of man's age, an active life is conducive to longevity, but in the later half a life that is peaceful and uniform is more favourable. However, if the constitution be sound, life may doubtless be prolonged for many years by moderating the passions and by temperance.

That so complicated a machine as the human body, so delicate in its mechanism, and so exquisitely formed in all its parts, should continue for years to perform its various functions, even under the most prudent conduct, is not a little surprising; but that it should do so to an advanced period under all the rude shocks it meets with, is still more truly miraculous. But all the long livers did not pursue one uniform course of life, for some of the most noted ones were frequently guilty of great irregularities in their manner of living.

However, let not this encourage the thought that excesses of any kind can go hand and hand with longevity.

On the whole it may be said, that all extremes are unfavourable to long life. Excessive heat enervates the body, extreme cold renders it torpid; sloth and inactivity clog the mechanism of the human machine, while incessant labour soon wears it out. On the other hand, a temperate climate, moderate exercise, pure country air and strict temperance, together with a prudent regulation of the passions, will prove to be the most efficient means of extending life to its utmost limits. And so, it may be explained, why the cultivation of philosophy, music and the fine arts, all of which manifestly tend to humanize the soul and calm the ruder passions, are so highly conducive to longevity.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXI. MARCH, 1902. No. 3.

Original Communications.

NOTES ON THE DIAGNOSTIC VALUE OF BLOOD EXAMINATIONS.*

BY
C. F. MARTIN, B.A., M.D.,
Assistant Professor of Medicine and Clinical Medicine, McGill University ;
Assistant Physician, Royal Victoria Hospital, Montreal.

Never since blood examinations have constituted a routine practice in the diagnosis of disease has so much detailed work been done in the subject as during the past few years, and yet never has so much doubt been cast upon its value and significance. The subject has interested physicians and surgeons alike in the matter of diagnosis, prognosis and treatment ; to both it has often been of the greatest value, while, at times, too, it has proved most disappointing and unreliable. The journals which have of late been so replete with discussions on laboratory methods have considered more especially the value of blood examination with a desire to answer satisfactorily the following questions :—

1st. Is a blood examination at all of use for diagnosis in medical or surgical conditions ?

2nd. If such be the case, is not the mere estimation of the numbers of red and white cells and the amount of hæmoglobin quite sufficient for all practical purposes ? In other words do we really require stained and other preparations of blood to assist us in the diagnosis ? And,

3rd. Can the surgeon rely on blood examination for diagnosis and prognosis, for indications when to operate or when to refrain.

Concerning the first of these questions, as to whether or not any diagnostic value can be attached to blood examination, the scepticism is of course absurd and not even well founded. The basis of the claim however, rests on the fact that apart from a few parasitic diseases very few maladies can be absolutely diagnosed from examination of the blood alone. That is to say, without seeing the patient and judging from the general condition, signs and symptoms, one would scarcely be justified in making a diagnosis from the blood alone even if the so-called "blood diseases" like chlorosis, pernicious anæmia even leuchæmia. For, after all, to diagnose the condition of chlorosis is merely to detect a symptom common to very many various diseases. In the generally accepted meaning of the term it implies a diminution of the hæmoglobin in each corpuscle, the cells themselves remaining but little altered in numbers and it matters not whether the cause be constipation, general debility, nephritis, lues or pulmonary tuberculosis. To rely upon a blood examination of this nature as a proof of mere chlorosis is to deceive oneself as to the underlying cause and very possibly to neglect some important organic disease. Without a physical examination of the various organs of the body we are utterly unable to exclude the serious organic diseases which induce a chlorotic condition of the blood.

---

* Read before the Montreal Medico-Chirurgical Society, February 21, 1902.

It is further in all probability true, that even *pernicious anæmia* itself is merely a symptom, the blood being gravely disturbed from some underlying causative disease, be it a gastro-intestinal infection or some form of intoxication. Although one special set of changes is often found in the blood in this disease, yet, the variations from the type are so wide and numerous that one can scarcely speak of its having a pathognomonic blood state. This is all the more true when one remembers that with the invasion of certain forms of animal parasites into the body, as also in certain forms of carcinoma one may obtain a condition of the blood exactly like that seen in well recognizable cases of pernicious anæmia.

In a classical case of pernicious anæmia for example, we look for a certain type of blood whose main features are, a great diminution in the red cells, which though greatly altered in shape and size, show many large ovoid forms of good color. There is a diminution of the hæmoglobin, though relatively not so great as is the corpuscular decrease hence the richer color of the cells (or in other words a high color index) ; lastly, one may expect to find many nucleated red cells and especially megaloblasts. Examining, however, the findings of most authorities, we learn that after all there is no necessity of having this pathognomonic condition of the blood in all cases. In fact, in a large proportion they do *not* all exist, except perhaps at a very late stage of the disease when the other features have already given evidence of the nature of the malady. In the interesting series of Dr. Billings, for example, we find in twenty cases, variations in the red blood counts of from 156,000 to 4,000,000, in one-fifth of the cases there was no high color index, in fact that in twelve of them the index was either constantly low, or low at some time or other during the malady. Furthermore, nucleated red cells were often absent during the course of the disease and frequently even when present, they were found only after a prolonged search and in very small numbers. Again, it was ascertained from this series that the megaloblasts which are regarded by many as a very important feature of the blood diagnosis, came most often only in the advanced stage of the disease. In his long series of examinations which have been tabulated, we note this interesting fact, that in the early stages of the disease they are certainly remarkably scarce, and that where they were numerous the disease was already far advanced and had shortly afterwards become fatal. Now the diagnostic significance, to be of value, should demonstrate the fact at the early stages of the disease when we are yet doubtful as to the differential diagnosis between pernicious anæmia and a possible latent gastric carcinoma. We are, therefore, confronted with a serious disadvantage, all the more so when we learn that some regard the presence of megaloblasts in carcinoma, if not as a frequent occurrence, at all events as not a very great rarity.

The limitations for diagnosis are quite as noteworthy in regard to the color index. We have already mentioned Dr. Billings' experience in this respect and the observations of Cabot on 110 cases bear this out. In thirty-one of his series there was no relative increase in the hæmoglobin. So too, has been our own experience in the cases admitted to the Royal Victoria Hospital. In twenty-four cases which were undoubted, (the diagnosis having been verified either by the subsequent course of the malady or by autopsy), the color index was plus in only six, distinctly low in five, there was a normal ratio in five, and in the remaining eight the index was at some time during the course of the disease increased, at other times diminished.

Our cases have also shown, as did the series of Billings and Cabot, that the blood count may vary very much during the course of the disease, that while often the count was below two million red cells, frequently it would attain to nearly the normal, though in the majority of cases, the number was below two million. An average of all the cases, male and female, gave to the red cells a percentage of 34.4.

Realizing then the remissions with non-characteristic blood counts, the rarity of the classical, typical signs in the early stages, when the differential diagnosis is so important, as also that other diseases may have often a blood state resembling that of the early stages of pernicious anæmia, we must acknowledge certain limitations in the significance of the blood findings though this need not detract from the value of the examination in the hope of finding the more typical form. That the limitation should be thoroughly recognized is important too for a special reason, inasmuch as if one relies too much on the value of the blood examination he will be apt to discard the diagnosis of pernicious anæmia made from the general signs, for the insufficient reason that the blood state was not typical of the disease.

Nor is it too extreme to say that even in leuchæmia the blood examination alone is insufficient for a diagnosis without regard for the other clinical signs. While the pathognomonic condition of the blood in this disease should be certainly recognized, one *does* nevertheless see or read of instances where in non-leuchæmic patients the blood resembled that disease. In order to be pathognomonic, the blood state (characterized as it is by very great increase of the mononuclear leucocytes), should not be found in any other disease. Nevertheless, Palma has found a similar condition of the blood in a case of sarcoma, Cabot, in certain cases of pertussis, in one of which there were mononuclear leucocytes varying in number from 103,000 to 185,000, instead of the normal six or eight thousand. We know further, that not infrequently there are periods of remission of the disease where the blood for a greater or less length of time returns to the normal, presenting no features whatever to aid us in the diagnosis. So rare, however, do cases such as these of Palma and Cabot occur that when the typical picture does present, one may be practically certain of the diagnosis, though the limitation as just explained leaves no doubt that the blood findings afford merely a confirmatory evidence in the diagnosis.

Perhaps, however, the best answer to the question so frequently raised of late as to whether or not a blood examination is ever necessary, may be answered by the following citation of a case:—

A patient, J. C., æt. 68, was admitted to the private wards of the Royal Victoria Hospital, complaining of chills and fever which had been present off and on for some weeks previous to his admission. There was no regularity in the occurrence of these symptoms but the patient instead of improving, became rapidly worse, inasmuch as great prostration supervened, repeated vomiting, and pains in the limbs. There was nothing in his personal history of any importance. With the exception of a history of an empyema necessitatis 40 years previously, he had been a healthy man and temperate in his habits. There was no history of malaria or of residence in a malarial district.

On Admission.—The only evidence of disease that could be found at first was some anæmia, weakness, occasional vomiting, some emphysema and old pleurisy, and a chondroma of the left testicle. The urine was normal. The retina showed no evidence of disease, and the glands were normal throughout, and in fact until the examination of the blood on the following day, no satisfactory diagnosis could be made. The very first examination of the blood in the fresh state, however, revealed an enormous increase of the leucocytes, these being almost equal in number to the red cells. The diagnosis of Myelogenous Leuchæmia was made on the basis of this examination and subsequently confirmed by stained preparations. Examinations of the blood showed for the following week a red blood count of between three and four million, a white blood count averaging about a hundred thousand, (in which the differential count showed by far the large majority to consist of myelocytes) and the hæmoglobin varied between 60 and 70 per cent. Soon after, the patient who had constantly had slight fever of an irregular and mostly intermittent type, became rather weaker, the blood count varied rapidly and within 24 hours the white cells decreased in number within a few days to almost normal. Progressive asthenia and coma developed and four weeks after admission he died. The blood count remaining normal to the end.

At the autopsy which was performed by Dr. Adami, the diagnosis of myelogenous leuchæmia was confirmed, the spleen and glands were found normal; the bone marrow, however, was characteristic of the disease.

The necessity of a blood examination was here self-evident, there being no signs or symptoms otherwise upon which one could base a diagnosis.

That the counting of the blood cells and the estimation of the hæmoglobin are sufficient for all practical purposes of diagnosis, is I think, generally admitted. I would go even further and say that in the majority of cases one can obtain *sufficient information from the microscopical examination with ordinary slide and coverglass of a freshly removed specimen of blood.* One can thereby gain a very fairly accurate idea of the leucocyte count, of its relation to the red cells, of the shape, size and arrangement of the latter, and when present, he can see the nuclei in their bodies. One may obtain in addition thereby an approximate conception of the amount of hæmoglobin from the coloration of the cells. Having this information, even if it be only approximate, we are in possession of whatever facts we need for ordinary differential diagnosis. I would not be misunderstood, however, to lack in my respect for the instruments now in vogue and from which one always derives greater satisfaction, but that they are not *usually* needed to make our diagnoses, will, I think, be acknowledged by most of those who have studied along these lines.

It is a comparatively easy matter to tell whether or not a very *marked* leucocytosis be present, should such be the case the condition is likely to be either leuchæmia, sarcoma, pneumonia, pertussis or sepsis, and between these various diseases, it is not often that a differential diagnosis would be called for inasmuch as the general signs and symptoms would declare the nature of the malady. Even in those rare conditions in which one is called upon to differentiate between general sepsis and acute lymphatic leuchæmia, a rapid glance at the fresh blood specimen will usually tell from the degree of leucocytosis as to which malady is present.

From such a simple examination too, it is quite easy to gather whether or not an anæmia, if present, be mild or severe; if, in other words, it be an ordinary, simple secondary anæmia, or approaching that of the pernicious type, nearly as much at all events as one can gather with any great satisfaction from the use of instruments. The arrangement of the corpuscles to each other, their color, size and shape, and their nuclei if present, will greatly help in the diagnosis, at all events will support sufficiently what an examination of the patient's general condition has rendered suspicious.

Without instruments then it is possible to obtain a considerable degree of satisfaction in diagnosis. With their help on the other hand we can gain more accurate estimates to complete the diagnosis.

Having done thus much for our diagnosis, the question arises, to what degree is a further examination of the blood necessary, and do stained preparations of the blood afford really a very practical aid in the detection of the disease. In other words, is a so-called *differential count* of the leucocytes of very great interest and importance. That it is interesting, of course, goes without saying ; for practical purposes, however, we are called upon to decide mainly between leuchæmia, with its mononuclear leucocytosis and those diseases in which a marked leucocytosis due to polynuclear cells is present. As already remarked, the degree of leucocytosis in the two conditions is usually so different as to render it unnecessary to make further examination and only in a few rare instances of doubt can it be of any importance. It must be confessed that in slight leucocytosis our own experience with differential counts has afforded us but little satisfaction.

Apart from these, however, there is a very large series of maladies in with a slight or moderate leucocytosis is present (about 20,000), and we are called upon to employ a knowledge of this fact for diagnosis. It must be admitted, however, that these leucocytoses occur under most varying circumstances, the list being far too long to enumerate here.

Incidentally it may be said that it occurs in most inflammations, sometimes being present, however, and sometimes absent, the amount depending upon the resistance of the individual and its relation to the degree of infection. Where there is a severe infection with little resistance there is no leucocytosis and vice versa. Then, too, more or less marked leucocytoses are present in uric acid diathesis, in chronic nephritis, (which is present in most elderly overworked people), after the use of phenacetin, after excitement or exercise or massage, or cold baths and after food ; this so-called digestive leucocytosis is not, however, always present, for what reason it is unknown. In face then of such a list it may well be asked what significance is to be placed on a moderate leucocytosis. It is true that by its means we are aided in distinguishing between abdominal inflammation and hysteria or between appendicitis and neuroses, but where a leucocytosis can occur so easily we must exclude all the many extra causes—a task not always easy. At all events we know in this connection that for reason of this variation we cannot employ the absence of a digestive leucocytosis to confirm a diagnosis of gastric cancer, as some have considered possible.

Again in one case of nephritis in which the autopsy confirmed the diagnosis to the exclusion of any other disease, there was a leucocytosis of 30,000, of which the main increase was in the small and large lymphocytes, in repeated examinations. In another patient with general debility there was a leucocytosis of 20,000, which at the end of a fortnight disappeared as the patient regained his health and strength. In this case the leucocytosis was of the ordinary variety (polynuclear increase).

Considering then under what great variety of circumstances one may get a leucocytosis and considering too the many latent conditions which would have to be excluded before we attach any diagnostic importance to the presence of some increased leucocytes in the blood, we are bound to acknowledge that the diagnostic value of this condition suffers in consequence. That lymphocytosis, too, is of some value in the diagnosis of pertussis may be true, to most practitioners the satisfaction would be greater were it possible to tell thereby when the disease had come to an end !

In attempting to form a rational conclusion as to the significance of slight leucocytosis we must be prepared to exclude many simple conditions, and we must be aware that no latent condition giving rise to leucocytosis is present. Thus our use of this means of diagnosis is limited, inasmuch as in those cases where it might be expected to signify some pathological condition, the increased cells may be due to something else.

It is just with reference, too, to this point that *surgery* loses so much the expected aid from blood examinations, and it is not to be wondered at that Dr. Deaver and other eminent surgeons fail to appreciate the value of blood diagnosis from the present state of our knowledge.

It is mainly perhaps in appendicitis, typhoidal perforations, and obscure pus formations that the hæmatologist claims to give aid to the surgeon. Let us see to what extent this is true. In appendicitis, the attacks are accompanied at all stages by varying white blood counts, abscesses may form without an increase of cells, or, *per contra*, one may obtain from a simple catarrhal inflammation, that later subsides, a marked leucocytosis (say 18,000), and lead the credulous surgeon astray. Dr. Deaver records one case of interest which will, I think, help to give us a clue to our means of benefiting such patients. An individual was admitted to his care with signs of appendicitis and the leucocyte count showed 20,000 cells. Operation was delayed for the nonce and subsequent examinations revealed a gradually decreasing leucocytosis down to the normal. Naturally it was concluded that pus was absent, but from other suspicious signs the abdomen was opened and a gangrenous appendix with local suppuration found. So far as I have found personally, or otherwise learned, a leucocytosis of over 20,000 has not been found in non-suppurative inflammations either of the appendix or of the pelvic organs, and for this reason Dr. Deaver's case might reasonably have been operated upon as early as this marked increase had been found. It should, I think, have strengthened his faith in the diagnostic value of great leucocytosis. The important point, however, is this, *viz.*, that the reverse rule does not hold good, and *one may readily get an absence of leucocytosis with extensive suppuration.* One should, therefore, not trust to a moderate leucocytosis as a basis for excluding the presence of pus if one would be rightly guided. In a case recently seen with Dr. Bell, the appendix was gangrenous and abscesses had formed in the liver, but the white cells numbered on an average only 15,000.

The same holds true for typhoid perforation, as was shown by Dr. C. K. Russel's interesting observations made at the Montreal General and Royal Victoria hospitals. In several instances the abdomen had been opened for symptoms of perforation with a leucocytosis of about 15,000 to 17,000, and nothing found. In other cases the white cells were less than normal, when perforation was in progress and had developed; but in no case where the leucocytes numbered more than 20,000, had the abdomen been opened without a perforation being present. Dr. Russell has added several others to his series, attesting the value of this feature, and it may, I think, reasonably be said that, to a surgeon, the value of a blood examination in this respect lies in the positive findings of a marked leucocytosis of over 20,000, and in the disregard for any leucocytosis which is merely moderate.

Much has been written on the value of hæmoglobin estimation as a guide to surgeons in treating cases of hæmorrhage with shock, *e.g.*, gastric ulcer, and it has been thought possible in this way to prevent fatal collapse by finding from the blood that the patient's condition would not warrant the attempt. Experience of those who are competent to judge does not seem to bear this out, and surgeons, it would seem, are more justified in relying on their observations from the patient's general condition than from the percentage of hæmoglobin.

The notes as above given have purposely avoided any reference to the Widal test, the examination for malarial plasmodia and bacteriological examination of the blood, as being already more than sufficiently dealt with in current literature. It may, however, be incidentlly said that difficulties in successfully cultivating bacteria from the blood in cases of sepsis have doubtless been due in the past to the insufficient quantity of blood employed. The more recent observers, who have by venesection used several cubic centimetres of blood for cultures, have been enabled to obtain excellent and positive results, not only in streptococcus septicæmia, but likewise in general gonorrhœal infections, in pneumonia, and in typhoid fever.

THE TOXIC ACTION OF ANTISEPTICS.

BY

CHARLES G. L. WOLF.

Antiseptic technique consists essentially in bringing micro-organisms in contact with a solution, usually aqueous, and containing a certain quantity of a metallic salt. This may be varied as in the case of phenol or boric acid, by the salt being replaced by a substance having acid properties. The use of other solvents, such as alcohol or acetone has for the most part been restricted to experimental work. In the exceptional case of formalin, the substance is neither acid nor alkaline, but is an aldehyde. Hydrogen peroxide and potassium permanganate act as oxidizing agents, and fall out of the class of antiseptics embraced by the salts of the heavy metals. It must also be noted that the time during which the organism is in contact with the solution is, on the whole, short. This applies more particularly to hand disinfection, and the flushing of suppurating wounds. In very rare instances, indeed, is it possible to bathe the infected surface for an extended length of time. For that reason, antiseptics are generally chosen for the rapidity with which they kill, rather than for their power of inhibiting the growth of micro-organisms.

Since the initial bringing together by van't Hoff (*Zeitsch. f. physikal. Chem. 1, 481*, [1887]), of facts which had accumulated regarding the properties of solutions, these have received an enormous amount of attention from physical chemists on all sides. The connection, however, between the antiseptic power, and the physical properties, has been given comparatively little attention by pathologists and the medical public generally. That such a connection exists, and intimately, it is the purpose of the following paper to show.

When sodium chloride dissolves in water, a clear homogeneous solution results which differs both from the original solid salt, and from the water in which it is dissolved. It conducts electricity. (Arrhenius, *Zeitsch. f. physikal. Chem., 1, 631*, [1887]). It differs markedly from a similar aqueous solution of substances such as cane or grape sugar in that these do not conduct the electric current. The difference in these solutions is also marked by other striking phenomena in connection with their freezing and boiling points. (Raoult, *Annales de Chim. et Phys.* (*6*), *VIII., 320*), and Beckmann (*Zeitsch. f. physikal Chem. IV., 543* [*1889*]), and their osmotic pressure (Pfeffer, Osmotische Untersuchungen, 1887), which cannot be more than mentioned here. This difference in the behaviour is due to the splitting up of the sodium chloride molecule into sodium and chlorine in the form of ions. These atoms or atom-like particles are closely connected to one another, and do not exhibit the usual properties of the free elements except under special conditions. This peculiar form of separation is known as dissociation, and the ions differ from the elements in a free state in holding enormous electric charges. It is these charges which prevent the elements from behaving, when present as ions, as the free elements themselves do. The charges which the ions of sodium chloride hold are opposite and equal. The sodium is assumed to be positively charged, and the chlorine negatively. By reason of the equality of these charges the solution itself is electrically neutral.

In solutions of medium concentration some of the salt may not split up into ions, but may go into solution undissociated. With increasing dilution the amount of separation increases, and this holds good for all solutions which conduct electricity. Therefore, in a concentrated solution there may be comparatively little separation into ions, in medium concentration, a fair proportion of the ions and the undissociated salt, while at high dilution the salt may have dissociated to the extent of 90-100 per cent.

With the exception of the stronger acids, sulphuric, nitric and hydrochloric, the other acids dissociate incomparably less than their salts. A comparison of sodium chloride and an organic acid, such as cinnamic acid, shows that while the former is practically completely dissociated when its molecular weight in grams is dissoved in 1,000 litres of water, cinnamic acid has but 17.0 per cent. of its molecules split up into the corresponding ions.

Mercuric chloride is a typical example of an antiseptic which is used in aqueous solution, and at comparatively high dilution. The aqueous solutions of this salt used for antiseptic purposes range from 1-1000 to 1-10,000. In the former case the concentration is one molecular weight in 270 litres, while with the latter the concentration is one molecular weight in 2,700 litres. Both these dilutions fall in the range of high dilution, and it might be expected that a large percentage of the salt would be dissociated. This is the case, for at the strength of 1-1,000, mercuric chloride is well dissociated, while at 1-10,000 practically complete separation into ions has taken place.

Considering this to be so, the conclusion naturally follows that any effects experienced in the use of mercuric chloride must be due to the ions themselves, and not to the undissociated salt. As sodium chloride is ineffectual as an antiseptic although dissociated in aqueous solution, no antiseptic action can be ascribed to the chlorine ion.

Therefore the effect of the solution of mercuric chloride is due, necessarily, to the mercury ion, and any salt of mercury which for an equal dilution contains a less concentration of these ions must be less effective as an antiseptic. Any addition to the solution of mercuric chloride which tends to decrease the concentration of the mercuric ions will therefore diminish the toxicity of this salt.

Reasoning along this line, Paul and Krönig (*Zeitsch f. phys. Chem., XXI., 428 [1896]*) investigated the action of different salts of mercury under varying conditions. The method pursued was to distribute evenly spores of bacillus anthracis, and streptococcus pyogenes aureus on garnets. These garnets were dried and immersed for a given length of time in the solutions to be tested, at the end of the immersion period the excess of mercury was precipitated, and the spores unattacked were sown in agar, grown and counted in Petri dishes. For a given concentration, the number of colonies fell rapidly according to the time of immersion in the antiseptic solution. This was to be expected. The experiments were therefore conducted so that the spores were immersed for equal length of time in the solution to be tested.

According to Bersch (*Zeitsch. f. phys. Chem., VII, 383 [1891]*), the salts of mercury for any given concentration dissociate in the following order:—

Mercuric chloride	$HgCl_2$
Mercuric bromide	$HgBr_2$
Mercuric sulphocyanide	$Hg(CNS)_2$
Mercuric iodide	HgI_2
Mercuric cyanide	$Hg(CN)_2$

That is to say, other things being equal, there are more mercury ions in a solution of mercuric chloride than in the bromide and so on. One should therefore expect that the antiseptic action of the solutions would range themselves in the same order. The following table shows the results obtained:—

Bacillus Anth. (Spores). Comparison $HgCl_2$ 16 litres 6 min. 6 col.

Solution.	20 min.	85 min.
$HgCl_2$ 64 litres	7 col.	0 col.
$HgBr_2$ 64 "	34 col.	0 col.
$Hg(CN)_2$ 16 "	∞	33 col.

From this table it will be seen that while in the 20 minute experiment an equal concentration of $HgBr_2$ was roughly 5 times less effective than $HgCl_2$, a solution of the cyanide 4 times as strong as the preceding two, the number of colonies for 20-minute immersion was so great as to be uncountable.

A similar result was obtained with Staphylococcus pyogenes aureus.

Solution.		3 min.
$HgCl_2$	64 litres.	0 col.
$Hg(CN)_2$	16 litres.	6700 col.

Mercuric cyanide stands alone among the simple salts of mercury owing to its feeble denociation.

In the case of silver, the salts and mixtures also range themselves, according to the concentration of the silver ions in the solution.

Bacillus Anth. (Spores). Comparison $HgCl_2$ 16 litres. 3 min. 32 col.

Solution.	15 min.	60 min.	525 min.
1. $AgNO_3$	28 col.	0 col.	0 col.
2. $AgClO_3$	39 "	0 "	0 "
3. $AgClO_4$	438	4	0
4. Ag_2SiF_6	840	194	0
5. $C_2H_5.\ SO_2OAg$	1187	450	0
6. $C_6H_4.\ OH.\ SO_2OAg$	1783	383	0
7. $AgNo_3 + 2.5\ NH_3$	∞	852	0
8. $AgNO_3 + 10.0\ NH_3$	∞	18.	0
9. $AgNO_3 + 1.5\ Na_2S_2O_3$	∞	4565	3627
10. $AgNO_3 + 2.0\ KCN$	∞	4395	3637
11. Argentamin	∞	....	4200

In reviewing this table it will be seen that the nitrate stands at the head of the list as an antiseptic, closely followed by the chlorate. As the anions become more complex the toxicity of the salt decreases. This is particularly the case with the silver ethylsulphate and silver hydroxy phenylsulphate.

It will be noticed that the toxicity suddenly falls on the addition of substances such as ammonia, sodium thiosulphate, and potassium cyanide to a solution of silver which previously has had full antiseptic power. It must also be remembered that all these reagents give a solution containing silver, and that the metal has not been removed from the solution as a precipitate.

Reasoning from the standpoint of physical chemistry, one would expect that this fall was due to the disappearance of ions of silver in the solution. Measurements of the electrical conductivity and other physical data show undoubtedly that on the addition of these salts to solutions of silver, complex salts are formed which are either dissociated with difficulty or that the silver dissociates in combination with something else, and is therefore not present as a free silver ion. A similar state of things with a somewhat different explanation is found in the case of mercuric chloride.

It is usual in order to increase the solubility of this salt to add a soluble chloride such as sodium or potassium chloride. Accordingly in such a solution there will be sodium chloride, mercuric chloride, sodium ions, mercury ions, and chlorine ions. It will be seen that for a given number of mercury ions previously in solution with an equivalent number of chlorine ions there has been added a substance, sodium chloride, which also dissociates giving more chlorine ions. Hence, for the same number of mercury ions there is now an excess of chlorine ions in the solution. The effect of this will be in the language of the physical chemist towards a "forcing back of the dissociation" Fewer mercury ions will be found in the solution and therefore one will expect a loss in toxic power.

That this is the case will be seen in the following table:

Bacillus Ant. (Spores). Comparison $HgCl_2$ 16 litres, 8 col.

Solution.		6 min.
1. $HgCl_2$	16 litres	8
2. $HgCl_2 + NaCl$	"	32
3. " $+ 2NaCl$	"	124
4. " $+ 3NaCl$	"	282
5. " $+ 4NaCl$	"	382
6. " $+ 4.6NaCl$	"	410
7. " $+ 6NaCl$	"	803
8. " $+ 10NaCl$	"	1087

As will be seen a solution of mercuric chloride at this dilution is 130 times more effectual than the same solution to which has been added 10 equivalents of sodium chloride.

As Paul and Krönig remarked, this is of very practical importance. In the German pharmacopœia the officinal antiseptic tablet is made up with 4.6 equivalents of sodium chloride; with this amount of sodium chloride the toxic action of the solution is markedly decreased. This is less so in solutions of greater dilution owing to the relative increase in the dissociation, but even in a dilution of 256 litres, that is to say approximately 1-1,000, the difference is quite apparent.

It is therefore well in increasing the solubility of an antiseptic to take into account the possible effect of the reagent added on the general toxic properties of the resulting solution. It is beyond the limits of this article to take up the highly important results of Kahlenberg and True who worked with lupines, (*Botanical Gazette*, 22, 81 [1896]), of Dreser on the effect of mercury solutions on fish, frogs, yeast, (*Archiv. f. Exp. Path. u. Phar.* XXXII., 456, [1893]), of Clark on moulds (*Journal Phys. Chem.*, II., 263, [1899]), or of Paul and Sarwey (*Münch Med. Woch.*, XII. [1901]) on the disinfection of hands. It is sufficient to say that the statement made by Behring (*Zeit. f. Hygiene*, IX., 400 [1890]), that the disinfecting power of solutions of mercury was entirely due to the amount of soluble mercury in the solution has been entirely disproven.

Cornell University Medical College, Department of Chemistry, New York.

THE MECHANICAL TREATMENT OF HIP JOINT DISEASE.

BY

CHARLES OGILVY, M.D.,

Instructor in Orthopædic Surgery, New York Post-Graduate School and Hospital ; Visiting Surgeon to Randall's Island Hospital, N.Y. ; Visiting Surgeon to Daisy Field's Hospital for Crippled Children, Englewood, N.J.

The diagnosis of hip joint disease having been made, the question of treatment immediately confronts us. We are called upon not only to relieve our patient from immediate suffering, but to direct our attention to the pathological condition present; to bring about by the application of scientific principles, that process of repair which will result in complete resolution of the diseased tissues to their normal or healthy condition.

Before we can scientifically treat hip joint disease we must first know the cause and course of the disease. The cause we most frequently trace to some traumatism. This sets up a local inflammatory condition. Then follows the invasion of the tubercle bacilli on these now inflamed tissues. There is a steady combat of the bacilli with the army of leucocytes supplied by nature to resist the onset of the invaders, and subsequently the final supremacy of the latter followed by the subjective and objective symptoms present.

Not until we have fully learned all the microscopic as well as the macroscopic changes taking place, can we expect to follow the disease to a successful issue.

Rest for inflammation and disease finds no exception here, and absolute fixation alone invariably gives relief. But when we consider that we have in the hip joint a diseased zone which is so prone to irritation from friction, owing to the proximity of the head of the bone to the acetabulum; then we have also to consider the best means of separating these surfaces and keeping them apart. By so doing we allow the process of repair to go on without constant irritation to the inflamed area which would be caused by the constant rubbing of the ball and socket joint. And thirdly, the joint must be protected from further injury. So that the three essentials are (1) immobilization, (2) extension, (3) protection.

We will now briefly consider the brace, splint or appliance which will best accomplish these ends.

Not infrequently do cases come to us in which, either from maltreatment or neglect, there is a greater or less amount of flexion at the joint. and it is necessary to overcome this deformity in order that efficient extension may be obtained when the brace is applied.

If in this case there is a history of such deformity having been present for two or more years. an operation may be deemed necessary The patient is anæsthetized and the limb forcibly extended, tenotomies being performed where necessary; after which a plaster of paris spica is applied and allowed to remain on for some weeks, until a brace can be adjusted.

But a large majority of these cases can be straightened without operation and non-operative treatment should at least have a trial in all cases. When we consider the very grave liability of setting up an acute condition of the disease, which though smouldering at the time is readily fanned to a flame by the slightest traumatism, we can understand why it is that after forcible correction these cases may readily go on to abscess formation. Therefore should one always consider carefully before operating.

The non-operative treatment that I refer to is to put the patient to bed with extension applied. In applying extension for separation of the joint surface, it can be easily understood that the line of traction in order to get the best results, must be "in the direction of the axis of the neck of the femur." To obtain this we apply from 6 to 12 pounds of extension weight in line with the axis of the shaft of the femur, and from two to three pounds lateral traction at right angles to it. The resultant of these two forces thus applied is directly on the line of the axis of the neck of the bone.

Where the deformity of flexion is present as mentioned above, the extension made in the direction of the axis of the shaft is applied in line with the angle of deformity. This angle or deformity we gradually decrease by lowering the limb until the foot rests upon the bed and the limb is perfectly straight.

I have seen a contraction of eighteen months duration thus respond to treatment within four weeks.

Having overcome the deformity present, some urge us very strongly to continue the bed treatment, keeping the patient for months in bed with extension. But there are none of us who have carefully watched patients so confined, that have not noticed their gradual loss of vivacity and vitality, and have seen all degrees of anæmia develop, in a comparatively short time.

We have long since come to the conclusion that these cases must be kept up and out in the open air as much as possible.

Before discussing the hip brace, let me refer to what is frequently resorted to in the treatment of these cases, viz., the plaster of paris spica. See Fig. 1. This may be applied as a temporary brace at any time when another brace is not available. It gives immobilization and protection to the joint, but little if any extension, and when the patient walks upon this spica, even when it has been most carefully applied, there is with every step taken a slight jarring of the joint, transmitted from the foot to the hip. Cases allowed to walk upon these spicas for any length of time not infrequently result in abscess.

But there are times, as I have said, that we are unable for various reasons to supply a brace and when it is particularly desirable to have our patient up and out of bed. Then the plaster of paris spica is particularly useful.

The mode of its application is as follows:—The patient is slightly elevated from the table. This can be most conveniently accomplished by using what is commonly known as the "spica rest," which is in its simplest form, a board of a couple of feet in length and almost a foot wide. From one end of this board, and projecting at right angles to it, is an "arm" of iron five to six inches long, which terminates in a flattened hand or support parallel to the board. On this support the sacrum of the patient rests. The shoulders and head are elevated and supported by pillows. The patient steadies himself with the other leg, the knee being flexed and the foot upon the table. The leg on the side of the diseased hip is extended to any angle desired, being brought down as straight as possible. The patient is then held firmly in position by an assistant.

The body, thigh, leg and foot are enveloped in a thin layer of cotton which is bandaged smoothly on. Over this the plaster of paris bandages are applied. It is well to carry the cotton well up on the thorax, leaving about two inches extending beyond the plaster of paris, so that having taken several turns of the plaster bandages round the body, the free edge of cotton may be turned down over the plaster already applied and be included in the next few turns of the plaster, by so doing, a collar of cotton surrounds the upper edge of the spica, which prevents any possibility of excoriation from the sharp cutting edge of the plaster. The spica should extend from the eighth rib down to the foot which it includes.

It will be found advantageous to strengthen the spica at the hip and knee joints with splints interwoven between the layers of plaster. Care should be taken to carefully pad the ends of these reinforcing splints.

But a plaster of paris spica as I have said can only be used efficiently as a temporary splint and these cases need many months of brace treatment.

We have seen that the requisites for successful treatment are immobilization, extension and protection.

A brace that will immobilize the hip joint must of necessity be one that extends well up beyond the joint itself and well down upon the leg. If this consists of a rigid rod of steel or iron and is firmly secured to the body above and to the leg below, we are enabled to securely immobilize the joint. Figs. 2, 3, 4.

To obtain extension the brace extends beyond the foot. Leather straps are attached to the foot piece of the brace. Adhesive plaster with buckles attached are firmly bandaged to the leg.

Longitudinal traction is then made by buckling the straps of the foot-piece to the adhesives upon the leg. Counter extension is made against the "ring" as seen in figure, which gives a firm support.

In order to have extension made in the line of the neck of the femur we must have lateral traction of two to three pounds. This is obtained by having the brace made not in exact conformity to the outline of the thigh, but curving out from it to a distance of $\frac{3}{4}$ inch to 1 inch. The limb is then drawn out to the brace by a lateral traction strap adjusted several inches above the knee. The resultant of this traction at right angles to the shaft of the femur, and the longitudinal traction already referred to from below in line with the shaft, is directly in line with the neck of the bone.

A high shoe of from 3 to $3\frac{1}{2}$ inch elevation is worn on the opposite foot. Crutches are worn. The patient, using the high shoe and crutches to walk upon, allows the leg on the affected side to swing free of the ground, with a pendulum-like motion. The pelvis and limb moving "en masse" and the brace swinging freely as I have said, does not permit of even the slightest jarring of the hip joint.

The length of time such a brace must be worn will depend entirely upon the case under treatment. No case of true hip joint disease can expect to be cured within eighteen months and the large majority of cases take considerably longer. A wise plan to follow is to keep the brace applied for at least one year after all the symptoms of the disease have disappeared.

The subject of "bracing" in hip joint disease is one on which not a few papers have been written. The question of lateral traction to relieve intra-articular pressure has been ably treated by Dr. A. M. Phelps and others, whose ideas I have repeated in the above. I am much indebted to Dr. Phelps for the cuts of the braces herein figured.

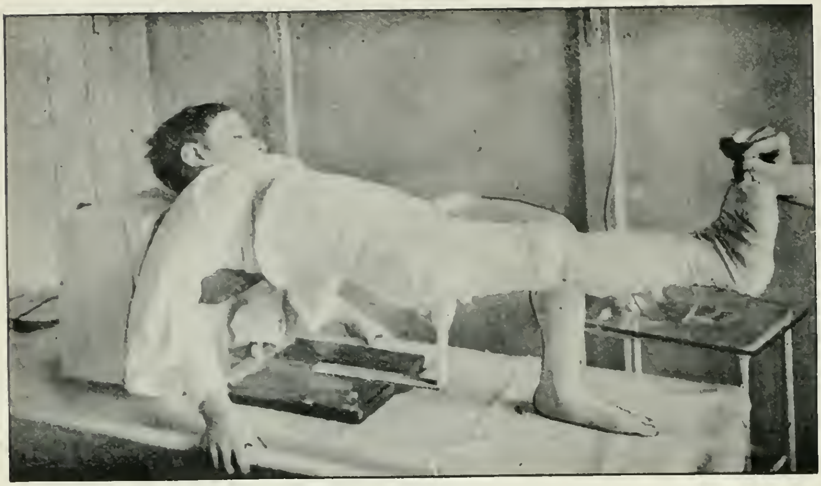


Fig. 1.

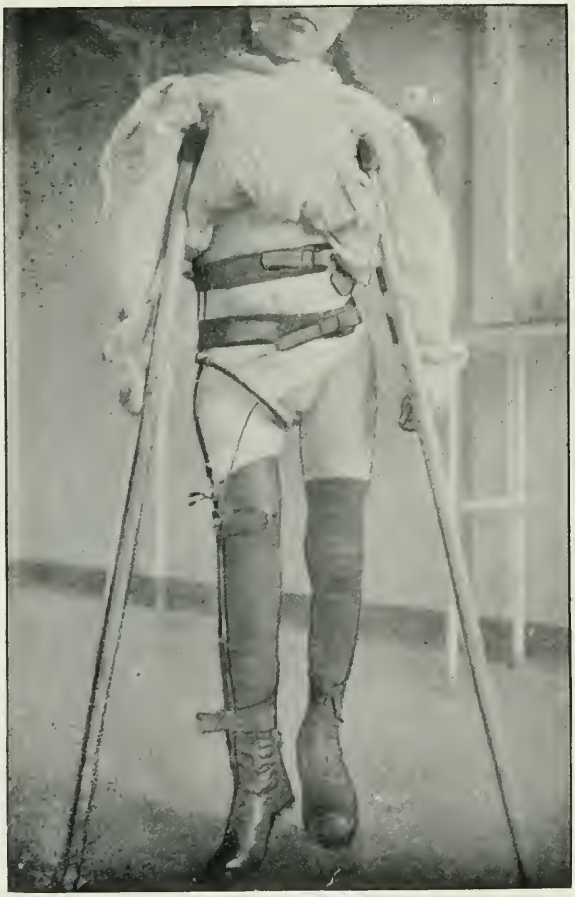


Fig. 4.

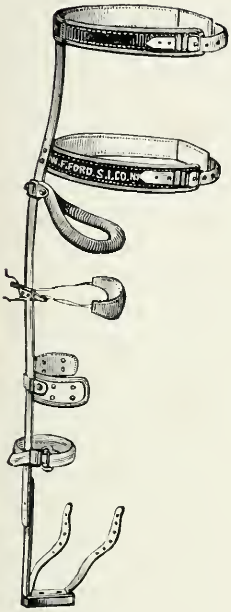


Fig. 2.

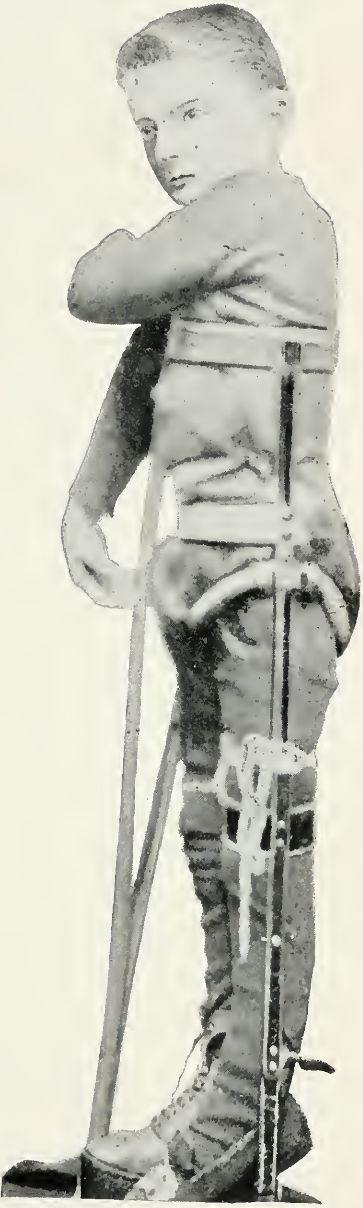


Fig. 3.

A CASE OF QUARTAN MALARIA.

BY

CAMPBELL P. HOWARD, B.A., M.D.,
Resident Physician, Montreal General Hospital.

The following case is of interest from the fact that although the records of the hospital show that every year there are a few cases of malaria admitted to the wards, this is the first case of the quartan type which has been noted in Montreal. The clinical history and microscopical appearances of the plasmodium clearly differentiate this from the more common, tertian, form.

F. T., male, aged 26 years, was admitted to the Montreal General Hospital (on October 26, 1901), under Dr. W. A. Molson, to whom I am indebted for permission to report the case.

Complaints;—(by interpreter). (1) " Fever and chills." (2) " Headache." (3) "Weakness," and (4) "Thirst."

Personal History;—Patient was born in Italy at the village of Campobasso, on the outskirts of Naples. He worked most of his life, before immigrating, on a farm. Four years ago he paid a visit to America, but returned to Italy after a few months. In September, 1901, he immigrated to Canada. Has been temperate in the use of alcohol and tobacco; no venereal history. Has been married for several years and has four children. Has always enjoyed good health, except for previous attacks of malaria, which is very prevalent in his district.

Family History:—Father died from malarial fever; otherwise negative.

Present Illness:—On September 29, 1901, while *en route* from Italy to America, patient was taken ill with headache and feeling of general malaise. This was shortly followed by chilly sensations (but no actual rigor) lasting 15 to 20 minutes. There now occurred an intense febrile stage which lasted several hours during which he was consumed with thirst, and this in turn was repleaced by a sweating stage. The paroxysm occupied the greater part of twenty-four hours. Then followed forty-eight hours without fever or any discomfort, when the paroxysm was repeated, and so on regularly every fourth day. On reaching Canada, as the disease continued, he sought medical advice, and was treated for typhoid fever for several days without any effect.

---

* Read before the Montreal Medico-Chirurgical Society, February 21, 1902.

On October 26, 1901, he applied to the hospital for treatment, being then in the height of a paroxysm.

Present Condition:—Patient is a young man of good nutrition and musculature. Average intelligence ; nervous and excitable. Olive complexion of the race, with slight pallor of the mucous membrane. No herpes or other cutaneous eruption. Eyes bright; sclerotics creamy white. Slightly chilly. On admission, temperature 103° F.; respiration, 34 ; pulse, 100.

Lymphatic system:—Inguinal glands slightly enlarged and hard, otherwise negative.

Circulatory system :—Subjective, chilly sensation but not actual chill, coldness of extremities. Pulse 100, regular, large volume, and slightly increased tension. Visible pulsation in vessels of neck; slight cyanosis of lips and finger tips. Heart, apex beat faintly visible in fifth space internal to nipple line; no increase in dulness; sounds faint, and well marked bruit in vessels of neck.

Blood examination made half an hour after admission shows a few red cells containing typical plasmodia of Laveran with very large pigment granules in a state of sluggish motion, possibly of quartan variety. The containing cell is larger than normal and of a decidedly brassy hue. No rosettes or flagellated forms found.

Respiratory system:—Slight cough with small amount of blood-tinged muco-purulent expectoration. Physical examination negative.

Digestive system :—Appetite good; marked thirst. Tongue covered with whitish fur, moist and flabby, with marks of teeth evident.

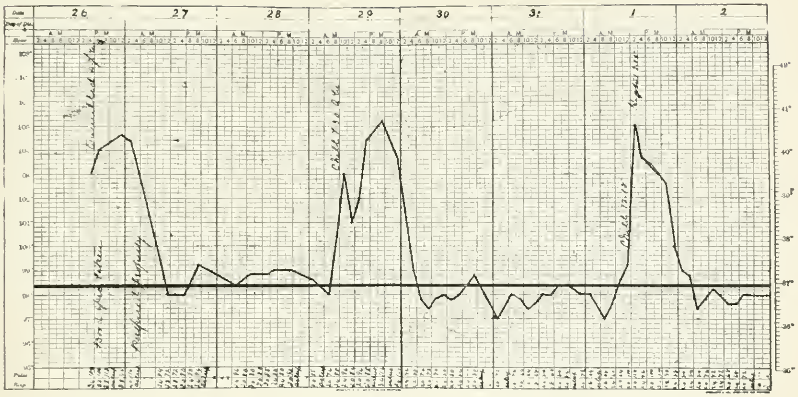
Abdomen flat and soft with slight prominence in left hypochrondrium. No rose spots. Liver : edge palpable below costal margin for one finger's breadth. Dulness in the right nipple line equals 12 cm. Spleen quite distinctly palpable, edge hard and round, reaches 4.5 cm. below the costal margin in the left nipple line, and extends forwards to the median line. Absolute dulness commences above at the upper border of the 7th rib in mid-axilla and extends downwards for 14 cm. Bowels constipated.

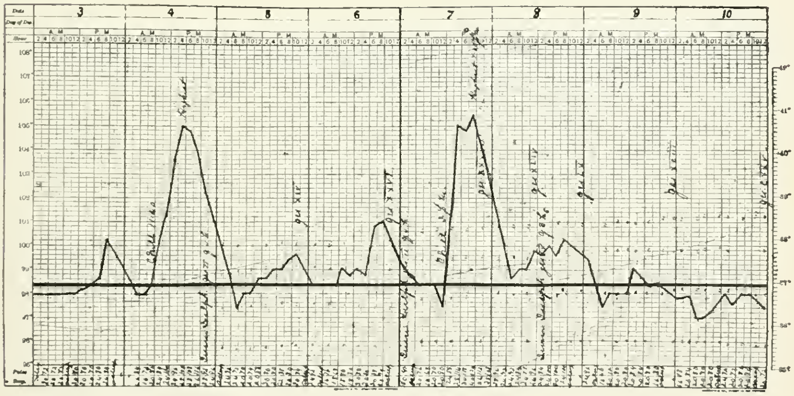
Genito-urinary system :—Urine neutral, sp. gr. 1013, straw colour, turbid, contains albumin and no sugar. Faint Erlich reaction.

Nervous system :—Headache frontal and slight. Is nervous and emotional. Reflexes normal.

DIARY :—

October 28th:—Patient is perfectly comfortable to-day. No headache and has hearty appetite. Temperature, 99°; pulse, 80; respiration, 20. Widal reaction negative. Urine still contains albumin and one granular cast was found. Erlich reaction negative.


Date
Day of Dis.
Hour
26
27
28
29
30
31
1
2
A.M.
P.M.
Pulse
Resp.
Chill 7.30 A.M.
Chill 12.15
41°
40°
39°
38°
37°
36°
35°


Date
Day of Dis.
Hour
3
4
5
6
7
8
9
10
A.M.
P.M.
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
96°
95°
Pulse
Resp.
42°
41°
40°
39°
38°
37°
36°
35°

Blood examination revealed numerous plasmodia with large, sluggish, active granules in periphery of cell.

October 29th:—Patient complained of slight headache at 7 a.m. with feeling of malaise and slight restlessness. At 7.30 a.m. had chilly sensations and shivered slightly for about fifteen minutes. Temperature gradually rose from 98 to 100 1-5° at 8 a.m.; 103° at 10 a.m.; then fell again to 101° at 12 noon; again reached 102° at 2 p.m.; 104 2-5° at 4 p.m.; 105 1-5° at 8 p.m. While the temperature was rising he complained of fever and tossed off all the heavy bed-clothes. Face was flushed, eyes bright, tongue dry, and pulse hard and accelerated. This stage lasted until 8 p.m., when he became bathed in sweat and the temperature gradually fell until it reached normal next morning at 6 a.m. No blood examination was made during the chill.

October 30th:—Patient perfectly comfortable to-day. Sat up and was very cheery, being anxious to get up; temperature normal. Blood examination revealed one or two plasmodia. Blood count revealed a secondary anæmia.

October 31st:—Patient well with subnormal temperature. Blood revealed numerous plasmodia, many with pigment clumped in the centre of the granules. One rosette found consisting of eight segments with sharp line of demarcation. One leucocyte found which had engulfed a plasmodium.

November 1st:—Had another paroxysm this day starting at 12.45 noon, reaching 105° at 2.15 p.m., and falling gradually towards evening. Characters similar to previous one.

November 2nd and 3rd :—Afebrile for 44 hours, when there was a slight rise in temperature to 100 1-5°. Blood specimens taken every hour during the night revealed a few typical rosettes.

November 4th:—Another paroxysm to-day with the usual characters. Quinine sulphate, grains 2 in solution, was started at 10 p.m., to be repeated every four hours.

November 5th and 6th:—Plasmodia present.

November 7th:—Patient had had 34 grains of quinine up to 10 a.m., but paroxysm of the usual character occurred.

November 8th:—Temperature reached 98 3-5° at 8 a.m. Had slight temperature all day ranging from 99° to 100 1-5°.

November 9th:—Few plasmodia found but with more difficulty and never two in a field as often previously.

November 10th:—Chill due to-day, but none occurred. This was after administration of 100 grains of quinine by 12 noon.

November 11th:—One or two plasmodia found.

November 15th:—Patient discharged cured, no plasmodia having been found since the 11th.

SOME OBSERVATIONS ON CONDITIONS PRESENT IN SCHOOLS OF MONTREAL.

BY

CHARLES H. CHURCH, M.D.

Early in December last the Committee of Hygiene instituted an inspection of the Montreal public and private schools to determine the extent to which vaccination had been practiced and to compel vaccination where the general order, which came into force in November, had not been complied with.

The inspection was carried out by six medical men, of whom I was one. Our orders were to inspect every arm where an effective vaccination had not been certified to by a medical certificate. The inspection was begun in the schools of the lower town and of the east end as they were judged to be probably the least immune, and were therefore the first to be visited. The original intention of continuing the inspection throughout the whole of the city schools had to be dropped owing to lack of funds at the disposal of the committee. Thus, my observations will be limited to only a few schools, dealing especially with three, which include about 1200 boys, one in the lower town, one in the centre of the city and one in the north end. All are public schools under the jurisdiction of a body of school commissioners. My observations will embrace general hygienic conditions, diseased and infected conditions, among the pupils of these three schools; and these observations, I would explain, were noted in what was necessarily a very rapid inspection and consequently only half of the truth is told. I feel satisfied that with closer observation many serious conditions would be made out which I overlooked in the enforced rapidity of my inspection.

The north end school is attended by a decidedly good class of boys, of whom there are some four hundred. The building is fifty years old with good large class-rooms and high ceilings. The rooms are however, in some cases very much overcrowded. There is no natural means of ventilation whatever, the only means of allowing the entrance of fresh air is by the opening of a sliding pane in the double windows, which may only be opened when the rooms are vacant on account of the draught. The air in the class-rooms after a couple of hours becomes very impure and oppressive, so much so that the principal, an exceptionally bright and up-to-date man, has seen fit to give a recess every two hours, during which time the rooms are aired as well as

---

* Read before the Montreal Medico-Chirurgical Society, February 7, 1902.

possible, but this rule can only apply in fairly mild weather. Of the closets and urinals in this school I had no opportunity of judging. The classrooms are designed irrespective of light conditions and the light consequently may be found on the right or left side, front or back, or a little of each as it may happen. The teachers complain bitterly of the poor ventilation and attribute ill health among themselves and pupils to it. Ample playgrounds are connected with this school; the desks and seats are most uncomfortable and faulty.

The centre town school is attended by the lower classes and numbers 250 boys. The building is an old one. Here the hygienic conditions are most dangerous, the classrooms are small and most terribly overcrowded. There is no attempt at all at ventilation during school hours, a few small slits in the outer windows alone can be opened in any case and these are kept carefully closed, making the atmosphere offensive in the extreme. One can imagine the atmospheric conditions present in a room sixty by fifty by ten, containing from sixty to seventy odoriferous boys with no ingress of fresh air whatever, after being occupied one hour. It is beyond description, and the terrible havoc among the children is apparent in every face. Weak, miserable, puny specimens they are, attributable, I am convinced, to the hours of incarceration in school. The closets and urinals are situated on each flat and are most defective and unhealthy with plumbing greatly in need of repairs, and a more modern system instituted. The lighting is like that in the north end school, merely a matter of chance. Everything about the place has an untidy and unwholesome appearance. The playground is much too small and the desks and stools are particularly uncomfortable and injurious.

In the lower town school the condition of affairs is absolutely unpardonable and nearly beyond description, an attempt at one I fear, will tax your credulity, nevertheless the facts will not be exaggerated one iota. Six hundred or more boys attend, of the mechanic or laboring class. The building is not an old one, hence there is no excuse for such a structure being erected in modern times. As one enters the building the odour of decomposing urine and defective plumbing is at once noticeable, and can be traced to the lavatory entrance, which is situated on the ground floor two feet below the level of the classrooms. The stench from this room is appalling. The lavatory is accessible by a door, which connects it with a central passage way communicating to all the corridors in the building, and into which several classrooms open, consequently the foul air is carried all through the building. On close inspection the closets were found in a filthy condition and the plumbing very defective, the urinals unflushed and disgustingly filthy. All the windows were closed and two air pipes alone could I discover, which were stopped up or of little service. A more disgustingly foul place I have never entered. The masters were a most unhealthy looking lot of men, and I have the authority of the principal that they are continually ill from some malady or other, three having contracted typhoid fever last spring. The pupils also are continually absent from the school through ill health; typhoid fever, measles, scarlet fever, etc., being some of the diseases reported as the cause of their absence. The principal took me all over the building and implored me if possible to do something to better their condition, his attempts for years having been of no avail. The boys are visibly affected by the general toxæmia, being heavy and listless, so much so, that it was difficult to arouse them sufficiently to answer ordinary questions at all rapidly, big boys being unable to remember their house numbers, street names, and frequently their own names without an effort. As one leaves the more hygienic conditions, one is struck forcibly by the corresponding dulness and depressed condition of the pupils in these schools, as well as by the marked deterioration of the general health in boys of the same social class. The want of personal hygiene in the boys of this school was very noticeable, dirty faces and hands were no bar to the liberal education dispensed there. The class-rooms are terribly overcrowded, accommodating double the number of boys they might with safety contain. There is absolutely no ventilation whatever in any of the class-rooms during school hours, and while there may be a rule forbidding expectoration on the premises, there is ample evidence of its infraction. The desks and seats are defective, the light in faulty position and poor, and the playgrounds not one-third what they should be.

My attention was directed to the existence of disease among the pupils early in my inspection by the presence of a lad of about ten years af age, of a pale, emaciated appearance and bearing every external evidence of tuberculosis. On close observation I found a general, submaxillary, glandular enlargement with a caseating gland at one side of the jaw the size of an egg and about ready to rupture. His temperature was 102°, and altogether he had been a very sick boy for months. The principal had noticed how ill and weak he looked, but did not feel justified in refusing him admission, although he made his duties as light as possible. I at once ordered him home with a note advising immediate medical attendance, which he had not been receiving. The principal expressed his gratitude for my having brought the case to his notice and asked me to act similarly in any case I might discover of any dangerous nature to the pupil or school. I did so, and at the end of my inspection fifteen boys had been notified to seek medical advice.

In the 1,200 pupils dealt with in this paper I found ample evidence of the following conditions:—Pulmonary tuberculosis in at least twelve cases, tuberculous adenitis in five cases, granular ophthalmia in three cases in one room and evidently infective. I am satisfied that in six or eight per cent. enlarged tonsils or adenoids, or both, existed with every external evidence and subjective symptom present. The parents in all probability were ignorant of the evil arising from such conditions, or even ignorant of its existence. General catarrhal conditions were numerous, with some of the worst cases of ozæna among them, rendering one nearly sick by their near approach and making it decidedly unpleasant for all around. Such cases should be compelled to seek treatment. Spinal deformity was marked in a few cases. Eye affections and defects of refraction untreated were frequent. Deafness was noted in quite a number of cases, and defective teeth in quite a large percentage. One also saw unmistakable evidence of the congenital type of syphilis.

Among skin diseases nearly every variety was met with, the following, however, were especially noticeable:—Seborrhœa, eczema, psoriasis of which last I do not over estimate when I say I saw fifteen cases. The effects of pediculi were very noticeable.

Regarding the private schools and orphan asylums in the city, I have had ample evidence of the great need of medical inspection to insure of efficient hygienic regulations being carried out in these institutions, and to eradicate contagious and infectious and other forms of disease from among them, for the protection of the public.

In conclusion, I would say that I have been struck with the injustice and danger to the community, to the masters and pupils, the unfortunate sufferers from the terrible conditions existing in some four schools, that I have felt it my duty to report to our society my observations, with the hope that we as a body might use all our influence to remedy the system which saps the vitality and impairs the future utility of the youth of our city and even sacrifices many lives annually.

A CASE OF RECENT ACUTE SUPPURATION OF THE CORNEA SUCCESSFULLY TREATED AFTER LIGATION OF THE CANALICULI.

BY

Frank Buller, M.D.,
Professor of Ophthalmology, McGill University ; Ophthalmologist to the Royal Victoria Hospital, Montreal.

The case I propose showing you this evening is not in itself of much interest or importance being merely that of a cornea badly damaged by a recent, acute, suppurative keratitis; but there are some features in connection with this case which make it worth exhibiting as illustrating an idea, or perhaps I may say a principle of treatment, which seems to promise satisfactory results in a class of corneal lesions which too often turn out badly.

It is a matter of common knowledge that acute suppurative keratitis is always a dangerous and often a destructive disease of the eye. Authorities state that about one-third of all such cases are complicated by, and are in reality the result of, infection from purulent inflammation of the tear-sac. In the presence of this complication all authorities are agreed that corneal lesions are particularly dangerous, and they advise immediate treatment of the tear-sac, in order to obviate as far as possible the ill effects of a constant supply of virulent, pus-producing germs from this their favorite breeding ground. Unfortunately, however, the corneal disease makes more rapid progress than the cure of the dacryocystitis, and the eye is apt to perish despite our best directed efforts.

It is a well known fact that the presence of a dacryocystitis is a positive contra-indication to any operative procedure involving an opening into the eyeball. About a year ago I operated on a patient for cataract in whom, although no pus or mucus could be demonstrated in the tear-sac, the puncta lachrymalia had a somewhat unhealthy appearance. In spite of the usual antiseptic precautions, suppuration of the wound promptly set in, and the eye perished utterly. Assuming that the tear passages probably furnished the septic infection, it occurred to me that this might be prevented by ligating the canaliculi before removing the cataract. This was accordingly done by passing a ligature around each canaliculus, about two millimetres to the inner side of each punctum. I used for this purpose No. 2 iron-dyed silk,

---

* Read before the Montreal Medico-Chirurgical Society, February 7, 1902.

and drew the threads tightly enough to occlude the canals without cutting through them. In this eye the cataract operation was perfecly satisfactory. Encouraged by this result I determined to try the same means of shutting off the tear-sac from the conjunctiva in the first case of suppuration keratitis that I saw in connection with disease of the tear-sac, and the patient I now show you is the first one I have had an opportunity of treating in this way. He came to me just about the New Year with the right cornea apparently ulcerated extensively, and for about three-quarters of its extent transformed into a yellowish pulpy mass. Only a small extent of the cornea to its upper and inner side was sufficiently clear to afford a view of the iris, which was here close up to the cornea. Pressure over the tear-sac caused a free regurgitation of mucopus from the sac. The corneal trouble had commenced suddenly whilst driving on a windy day about two weeks previously. A more hopeless looking eye could hardly be imagined, and there was certainly nothing to be lost by heroic treatment.

This I commenced by washing out the tear-sac through the canaliculi by one in three thousand perchloride solution. I then ligated the canaliculi, thoroughly cleansed the conjunctiva, and having instilled a ten per cent. solution of cocaine, touched the diseased cornea with formaline one in sixty, then filled the conjunctival sac with ten per cent. airol ointment and applied a compress bandage. The subsequent local treatment consisted in hot boric acid fomentations and the free use of airol ointment. The formaline caused some reaction for a couple of days, then a steady improvement ensued and you see we have now quite a presentable-looking eye. There is, of course, a large adherent leucoma, but more than half the cornea is sufficiently transparent to show the iris behind a shallow anterior chamber, and there is a prospect of ultimately obtaining useful vision. It is quite certain that the effect of the treatment was an immediate and complete arrest of the corneal suppuration, and a large area that had been completely opaque has regained transparency. The result is infinitely more satisfactory than I had hoped.

I have found no difficulty in reopening the canaliculi after they have been ligated for two weeks, nor does their temporary closure lead to disturbance from increased accumulation in the tear-sac.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Lupus and Tuberculous Abscess with Hydrogen Peroxide.

Charles Herbert Gunson, M.B. "Hydrogen Peroxide in the Treatment of Lupus and Tuberculous Abscess." *Brit. Med. Jour., Feb. 22, 1902.*

The writer draws attention to the highly beneficial action of peroxide of hydrogen in ulcerative conditions, whether associated with abscess or not. He uses it in the form of a spray three or four times a day, subsequently dressing the granulated surface with a boroiodoform ointment. The results are better if the peroxide is used slightly diluted, and Dr. Gunson thinks the mechanical action of effervescence which occurs whenever peroxide meets pus or blood, aids very much the elimination of poisonous toxins from the wounds.

The subject is no new one, but in the multitude of new germicidal agents it may be, as the writer suggests, that we are in danger of forgetting some very valuable old friends.

Traumatic Rupture of the Gall-Bladder.

DeForest Willard, M.D. "Traumatic Rupture of the Gall-bladder without injury of the Liver." *N. Y. Med. Jour., Mar. 1, 1902.*

This paper contains a very interesting account of a boy of five who was run over by the wheel of an express wagon. The skin was unbroken and there was no fracture of any bones; marked shock, but no collapse, as one gets in rupture of a viscus without hæmorrhage. For two weeks following injury there was fever, tympanites, abdominal tenderness, obstinate constipation, with clay-colored stools when a motion was secured, but no jaundice. At the end of two months in bed a tender spot was found in the spine in the lumbar region, and kyphosis fairly well marked,—evidently a traumatic spondylitis. This was treated by extension. The abdominal symptoms becoming more urgent an exploratory laparotomy gave exit to about two quarts of almost pure bile, not mixed with pus or blood. The patient's condition precluded any effort to find the source of the bile and the opening was simply packed with gauze and soon closed. Later on it became necessary to aspirate the peritoneal cavity for a re-accumulation of fluid, when another quart of bile was withdrawn and following this a biliary sinus persisted for several weeks, but no more fluid accumulated in the abdomen, and at the same time the patient gave evidence that the bile was passing through the proper channels and he made a perfect recovery.

It was, of course, impossible to say in what particular portion of the bile passages the rupture occurred, as the source of the bile in the abdomen had never been demonstrated. Still the writer of the article is probably correct in his assumption that it was the gall-bladder, judging from the analogy of the process of healing in this case to that of an ordinary cholecystotomy with drainage.

One is struck by the proof which such a case as this gives to the contention of Mr. Mayo Robson (Diseases of the Gall-Bladder and Bile-Ducts, pp. 21), that there is a large peritoneal pouch on the right side of the abdomen capable of retaining a quart or so of fluid. A drain in the loin would have been the proper treatment for such a case were one able to make a positive diagnosis, but so rare are these cases when not associated with the much more common condition of rupture of the liver, that a positive diagnosis would be very difficult indeed.

Operations on the Kidney.

Howard Kelly, M.D. "Methods of Incising, Searching and Entering the Kidney." *Brit. Med. Jour., Feb. 1, 1902.*

Dr. Kelly, in this interesting paper which he delivered before the New York State Medical Society, shows the need, on the part of operators in general, of a more careful study of the anatomical surface markings of the kidney itself. He points out that the anterior three-fifths of the kidney gets its blood supply from one set of vessels, while another set supplies the posterior two-fifths. The division between these two sets of blood vessels is marked on the convex surface of the kidney by a white line (Brœdel's line), which runs parallel with the posterior border of the organ. Here is the proper place for incision with the minimum amount of hæmorrhage and the maximum amount of access to the calyces and pelvis of the kidney for exploratory purposes. Be sure that the incision keeps parallel with the posterior border leaving about three-fifths of the kidney substance anterior to the line of incision.

In cases where the operator thinks it proper to suture the kidney substance after a nephrotomy, Dr. Kelly strongly recommends the mattress suture using a dull, round needle with catgut. These sutures coapt the cut edges accurately and produce sufficient pressure to control hæmorrhage. The capsule may be subsequently closed by a continuous suture of fine catgut.

The Technique of Nephropexy.

EDEBOHLS. "The Technics of Nephropexy, etc." *Annals of Surgery, February, 1902.*

It is wonderful how surgical literature as gathered in the weekly and monthly journals appears to run in cycles. Just now we are in a distinct kidney zone, as it were, and one can scarcely pick up a surgical periodical without finding therein some article of reference to these organs. The able writer of the article at present under consideration first deals exhaustively with the subject of nephropexy and shows how rapidly the operation has come to the front and how successful it is in curing the many distressing symptoms arising from wandering or floating kidney. As aseptic technique has improved, it has become a very safe operation so that now there need be no hesitation in fixing both kidneys at one operation.

He first calls attention to the great advantages conferred upon the operator by the use of the circular air cushion (which he introduced) and which is placed at right angles under the abdomen, as the patient lies, face down, on the table. It may be inflated to any desired degree, and I can speak from experience as to its great usefulness in operating upon the kidney. No change of position on the part of the patient is necessary for a double operation.

As regards the operation itself, Edebohls strongly recommends "broad denudation of the kidney by stripping off a large area of capsule proper on the one hand, and laying bare the quadratus lumborum along its whole length of the other" as the co-aptation of those raw surfaces "will give us the best tissues and broadest surfaces available for firm and broad union."

As regards the proper method for anchoring out the organ itself, the writer takes strong grounds against perforating the kidney substance, but by means of mattress sutures of chromicized catgut, he attaches the detached flaps of capsule to the lumbar muscles, passing the sutures through the muscles and tying on the outside of the latissimus dorsi. There are four of these sutures, two in front and two behind. The kidney should not be sutured too high up as the consequent strain is likely to defeat the object of the operation. "The completed operation will leave the denuded convex surface of the outer half of the kidney in snug contact with the raw quadratus lumborum, throughout the entire length of the latter from rib to ilium."

The author gives a table showing the mortality after the operation as 1.65 per cent. His last 135 cases were entirely successful.

J. M. Elder.

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in the department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

Canada Medical Record (Montreal).

February, 1902.

1. Progress of Gynæcology. A. Lapthorn Smith.
2. Notes from the Case-Book of a General Practitioner. F. W. Campbell.

L'Union Medicale du Canada [Montreal).

Février, 1902.

1. Volumineux Sarcome Fuso-Cellulaire Développé dans la Cavité Utérine. A. Marien et O. Normandin.
2. L'Hygiène dans les Salons de Coiffure de la Ville de Montréal. J. E. Dubé.
3. Nephrite Aiguë dite "a Frigore." E. Montpetit.
4. La Vaccination. Ses Contra-Indications. H. Hervieux.

1. MARIEN and NORMANDIN relate the history of a woman from whom they removed an enormous spindle-celled sarcoma of the uterine cavity. The cavity was very much dilated and completely filled by the mass, the walls were hypertrophied and were as much thickened as in a five or six months pregnancy.

2. DUBÉ enumerates the diseases that may be contracted in the barber shops, and points out the various measures that have been adopted by the Province of Quebec and by the Provincial Board of Health to ameliorate these evils.

3. MONTPETIT describes a case of acute nephritis, coming on without any apparent cause and ending fatally from uræmia. Bleeding gave temporary benefit.

4. HERVIEUX points out that danger from vaccination does not depend only upon bad vaccine or the carelessness of the operator, but often upon the general state of health of the individual. Vaccination should not be performed on persons recovering from a severe general disease and especially if the organs of elimination are not doing their

work well. All acute and chronic skin diseases should be cured before vaccination.

La Revue Medicale du Canada (Montreal).

22 Janvier, 1902.

1. Kystes Multiples et Tumeur Congenitaux Coccygiens. M. T. Brennan et Choquette.

29 Janvier, 1902.

2. A propos de Vaccination. J. E. Laberge.
3. Insulte aux Médicins Canadiens.

1. Brennan and Choquette describe a congenital tumour springing from the coccyx of a child of three months of age. It was about the size of a hen's egg, attached by a pedicle, very hard, movable, and without fluctuation. On rectal examination several small elastic tumours could be felt beneath the mucous membrane and which seemed to replace the bones of the coccyx. The tumor was removed and was found to be of a fibro-cystic nature, and with no connection with the spinal canal.

Le Bulletin Medicale de Quebec (Quebec).

Février, 1902.

1. De l'Anévrysme Aortique. Type Récurrent Laryngé. D. Brochu.
2. Quelques Cas de Placenta Prævia. S. V. Vezina.
3. Des Signes Pathognomoniques dans le Pratique. S. V. Vezina.

The Canadian Practitioner and Review (Toronto).

February, 1902.

1. Smallpox and Vaccination. John Cavan. (To be continued.)
2. A Resume of Facts Relating to the Digestive Organs in the Infant. C. S. McKee.

2. McKee gives a collection of known facts relating to the digestive organs and processes of the infant.

The Canada Lancet (Toronto).

February, 1902.

1. Enlargement of the Middle Lobe of the Thyroid. J. G. Adami.
2. Foreign Bodies in the Vermiform Appendix. J. Corinth Stinson.
3. The Present Epidemic of Smallpox in America. H. M. Bracken.

4. Necessity for the Early Recognition and Treatment of Insanity. Samuel Bell.
5. Importance of Climate Treatment in Pulmonary Tuberculosis. L. B. L. Bentley.
6. Tuberculosis of the Eye. D. C. Trow.
7. Cyst in the Right Nasal Passage. B. F. Butler.

1. Adami relates a case of advanced goitrous enlargement of the thyroid affecting only the middle lobe. The symptoms which it gave rise to were periodical attacks of dyspnœa which had been mistaken for asthma. The enlargement of the isthmus unassociated with enlargement of the lateral lobes is extremely rare. The lesson to be learned from the case is that in districts where goitre is prevalent, periodical attacks of so-called asthma should be regarded with suspicion so that cyanosis accompanied by a certain amount of stridor should lead, in absence of other explanations, to a careful examination of the lower portions of the neck.

6. Trow gives a short synopsis from the recent literature on tuberculosis of the eye and the structures about it.

7. Butler describes a thin-walled cyst containing a yellowish liquid attached to the under surface of the turbinated bone near the posterior end. The naso-pharynx contained a large myxo-fibroma, attached to the upper edge of the posterior nares of the same side and extending nearly to the base of the tongue. both growths were easily removed and there was no recurrence.

The Canadian Journal of Medicine and Surgery (Toronto).

1. The Operative Treatment of Chronic Bright's Disease. A. Primrose.
2. Pulmonary Tuberculosis. Its Treatment and Prevention. A. P. Proctor.
3. Treatment of Tuberculosis Affections of the Bones and Joints. Clarence L. Starr.

1. The disappearance of albumin and casts from the urine after operation on the kidneys has been noted by many observers, but it is to Reginald Harrison, in England ; and Edebohls, in America, that the profession is indebted for pointing out the bearing which these results have on the question of the possibility of curing albuminauria by surgical means. It was with the object of relieving grave symptoms in a case of chronic Bright's disease that Primrose undertook to operate upon the kidneys. A child, ten years of age, suffering from nephritis. The history was obscure as to the onset of his

illness, but for six months before he came under observation he had general anasarca and ascites. During that time paracentesis abdominis had been performed seven times. On admission to hospital the urine contained 1.6 per cent. of albumin, the abdomen was enormously distended with fluid, and there was great swelling of the face and œdema of the extremities. The lad's general condition was considered very serious and a gloomy prognosis was given. Paracentesis abdominis was performed and 130 ounces of fluid were drawn off. The urine contained albumin, numerous hyaline, granular and epithelial casts. On Nov. 21st he cut down on the right kidney in the loin and found it much enlarged. An incision of two inches was made in the capsule and the wound was drained for a fortnight. As the result of the operation, the amount of urine secreted in twenty-four hours gradually increased from fourteen to twenty-four ounces on the seventh day after the operation, while the percentage amount of albumin diminished from 1.6 per cent. to 0.8 per cent. The child's condition did not continue to improve and it appeared evident that permanent relief had not been secured, and it was thought justifiable to perform a more extensive operation upon the left kidney. Accordingly, on December 20th, the left kidney was exposed and the capsule removed in its entirety. The child was critically ill for some days subsequently, and contracted pneumonia, but he gradually recovered and the renal symptoms underwent a remarkable abatement, so that while the amount secreted in twenty-four hours rose to forty-four ounces, the amount of albumin diminished to .03 per cent., in fact, there was a mere trace, and the casts were very largely diminished in number. The general œdema vanished and the ascitic fluid disappeared. Sixty-two days after the last operation the boy was much stronger, the anæmia had largely disappeared, and the albumin was a mere trace. A few casts still remained but there had been no return of the ascites or œdema. The explanation of this remarkable and satisfactory result is to the writer's mind quite obscure, and the treatment has been so far purely empirical.

3. Starr treats of the methods employed for the relief of tuberculous affections of bones and joints.

Dominion Medical Monthly (Toronto).

February, 1902.

1. Vomiting of Pregnancy. W. McKeown.

1. McKeown believes that severe vomiting of pregnancy is much more frequently toxic than is generally recognized. The development of the fœtus must throw into the maternal circulation products not

present at other times, and which may produce the severe and dangerous forms of vomiting met with, and to which the term pernicious has been applied. He cites a case in which the fœtus had been dead for at least two weeks, during which time vomiting instead of abating increased in severity and the patient's general condition became rapidly worse.

The Maritime Medical News (Halifax).

January, 1902.

1. Report of a case of Appendicitis. Alexander Ross.
2. The Duty of the Medical Profession in the Prevention of Tuberculosis. J. F. Macdonald.
3. Rheumatism of the Eye. J. R. McIntosh.
4. Smallpox and Compulsory Vaccination. G. R. J. Crawford.
5. Notes on Smallpox Cases at Lawlor's Island. J. J. Doyle.
6. Case Book Reports. H. L. Dickey.
7. The Abdominal Bandage in Obstetric Practice. D. McIntosh.

1. Ross relates a case of appendicitis in which a temporary obstruction of the bowels followed operation.

2. MACDONALD defines the work of prevention of tuberculosis for which legislation is necessary.

5. DOYLE relates the histories of twenty-three cases of smallpox.

7. MACINTOSH has abandoned the routine practice of abdominal bandage in obstetric cases because, first, he could see no good in its use, and, secondly, because he fancied that it might do positive harm.

Reviews and Notices of Books.

HUMAN PLACENTATION : An account of the changes in the uterine mucosa and in the attached fœtal structures during pregnancy. By J. CLARENCE WEBSTER, B.A., M.D., L.R.C.P.E. With 233 illustrations. W. T. Keener & Co., Chicago.

We extend a warm welcome to this latest contribution to our knowledge of the human placenta, both for the sake of the work itself and also by reason of its authorship. With its appearance the " fierce battle ground of embryological research," for the greater part European, is still further extended, and though Dr. Webster is no partisan, the " Teutonic Host" is to be congratulated on having herein secured a doughty adherent.

Until the advent of this monograph, no serious work upon the placenta has appeared in English since Eden's communication in 1896. Yet, during this interval the most valuable addition of recent years has been made to the life history of the placenta, namely, its earliest chapter—a five days' gestation, published by Peters of Vienna in 1897.

" Human Placentation " gives us the results not only of the author's own investigations, which are considerable, but is also an epitome of our present knowledge of the placenta; it reveals incidentally how slow the growth of this knowledge has been, with what labor attained, and it indicates still more clearly the domain yet remaining of conjecture or of doubt. Synopses of the work of Peters, Leopold, Merttens, Reichert, Schwabe, Minot, and others—work which has given us descriptions of human embryos, the earliest yet published—are faithfully balanced and placed. Everywhere there is evidence of comprehensive grasp of the subject and of intimate knowledge of its literature.

The numerous illustrations, half-tone reproductions from photomicrographs, are placed together at the end of the book. In some instances these are not too clear, sufficient strengthening not having been employed in their reproduction, and their illustrative service to the text is somewhat impaired by reason of the absence of all cross references.

The author's actual research extends over a period of eleven years and includes an examination of the pregnant uterus ''during the second, third, fourth, fifth, sixth, seventh and ninth months, in the first, second, and third stages of labor, and during various stages of the puerperium." The results are embodied in nine chapters which follow a chronological order. A tenth chapter on the phylogeny of the placenta is added, and appended is an exhaustive bibliography.

Webster deals first with the structure of the uterine mucosa in the adult nullipara and describes it as varying in thickness and as showing always a differentiation into two zones—an outer zone next the muscular walls, spongy, and an inner zone compact. A special layer of connective tissue cells constitutes a basement membrane for the epithelium, both surface and glandular.

The life history of the placenta is begun at the fifth day in Peters' specimen, and is continued at the seventh, twelfth and fourteenth days by specimens of Leopold, Merttens and Reichert. Minot contributes a four week's specimen, and the author following here by means of the examination of early abortion sacs, takes up the actual research at the sixth week and continues it to full time.

In the vera we are told, decidual formation is found at the fifth day but only close to the ovary, subsequently these cells increasing in number, appear first in the innermost layer of the mucosa, the compacta. These cells are found to be derived exclusively from the pre-existing connective tissue cells of the corium, a view now very generally held, but no observation is made of any arrangement of these cells about the blood-vessels. Eden's view as to the extensive rupture of blood-vessels in the early vera is contradicted, but the author's contention that "in the great mass of mammalians the fertilized ovum enters into relationship with the *normal unaltered* mucosa," is scarcely, we think, to be maintained.

Peters' work throws light upon the origin and character of the reflexa, and with these observations Webster is in accord. The old view that the reflexa is formed by folds of the vera growing up round the ovum and so embedding it, is discarded. Instead, the ovum is the active agent, it becomes attached to the mucosa and excavates its way into the compacta, thereby embedding itself. This excavation is hereafter carried on laterally as well as deeply, and there results a portion of the mucosa which overhangs the ovum. This overhanging portion forms the reflexa, the gap through which the ovum entered, being closed by organized blood-clot. It results from this that the reflexa is merely the superficial part of the serotina. On the surface of the reflexa next the ovum there is no epithelium, and it is evident that Leopold's nomenclature, decidua capsularis (decidua reflexa) and decidua basalis (serotina) furnishes the more truthful description. Webster holds that the reflexa does not persist as a distinct membrane after the fifth month, for subsequently only scanty traces of it can be found save in the rare instances of the establishment of a reflexal placenta.

The early changes in the serotina during the first month are taken from the observations of Peters, Leopold and Reichert. The decidual cells are mentioned, but no definite statement is vouchsafed in respect of either their origin or arrangement. The suggestion made by Peters that the large polymorphic cells found in the compacta represent a beginning decidual cell formation is, as Webster suggests, open to question. These cells as described and figured by Peters seem to us more nearly to resemble the multinucleate protoplasmic masses, the result of the fragmentation of the solid plugs of epithelium formed by the proliferation of the maternal glandular cells, and which are so commonly seen in the placenta of rodents. The syncytium is described as fœtal in origin. It is at first cellular, the outer layers of the trophoblast, and becomes plasmodial only after its contact with maternal blood towards the end of the first week of pregnancy.

The decidua, we are told, reaches the point of highest development between the second and third months. Retrogressive changes subsequently appear and take the form of coagulation-necrosis,—*fatty degeneration is not found under normal conditions*—which results in a general fibrinous transformation. This degeneration is most marked in the serotina "possibly because of some influence of the fœtal epiblast."

In the chapter on the chorion the structure of the fœtal villi is fully discussed and the many interpretations that have been given by observers to the cellular covering of the mesoblastic core are tabulated. We strongly support the view held by Webster, Minot, Kostschenko and others, that this cellular covering, both syncytium and Langhans layer, is fœtal and epiblastic; but it seems to be more probable that the thin plasmodial layer which alone clothes the villus at term, represents Langhans layer become at length also plasmodial, rather than the remains of the outer syncytial layer. May not also the line of ingrowth of the villi into maternal tissue and their branching or further ingrowth, be determined here, as in the rabbit's placenta, by the disposition of the superficial maternal vessels ?

A short section is given to the description of the amnion. The amniotic cavity is described by Peters as being already closed at the fifth day. We miss here all mention of any allantois or "Bauchstiel," or discussion as to the manner in which the chorion is vascularized.

The separation plane of the placenta is, Webster tells us, through the compact layer, the main thickness of decidual tissue remaining attached to the uterine surface after delivery of the complete secundines. There follows an admirable description of the shed placenta, wherein the nature of placental infarcts is discussed, and a short chapter on the phylogeny of the placenta completes the work.

Again we must congratulate Dr. Webster. Not only have his own contributions to the subject been large, but in the present work he has done signal scientific service, in that he has skilfully gathered into a coherent thesis the sum-total of our present-day knowledge of the human placenta.

W. W. C.

INTERNATIONAL CLINICS: A Quarterly of Clinical Lectures and Specially Prepared Articles on Medicine, Surgery, Neurology, Etc., Etc. By leading members of the Medical Profession throughout the world. Edited by Henry W. Cattell, A.M., M.D. Volume IV., Eleventh Series, 1902. Philadelphia, J. B. Lippincott Company, 1902. Canadian Agent, Charles Roberts, Montreal.

The fourth number of the Clinics for the present series is a volume of 500 odd pages containing some thirty articles and well illustrated. Among the lectures we note one by Horatio C. Wood, jr., on the methods of investigating the action of drugs, a case of pulmonary osteo-arthropathy reported by R. C. Newton and Elizabeth Mercelis. Both of these are well illustrated. William C. Krauss reports a typical case of Parkinson's disease, and the types of hemiplegia are well described by G. L. Walton. An interesting condition and one which has lately been brought to notice by several writers is that of the similarity in physical signs between a foreign body in the air passages and rapid phthisis, a case of which is reported by James B. Walker. The larval parasites of man are described by James J. Walsh, the various forms met with being depicted in the egg, the larva and the adult fly. Sir Dyce Duckworth in a paper on "Clinical Observations on Certain Diathetic Conditions," regrets that the teaching of the last generation with regard to the influence of diatheses has been so completely abandoned by present-day writers, and sets forth arguments to show that the idea of there being a scrofulous or arthritic diathesis in no way contradicts the latest teachings of modern medicine. Deformities in children from the standpoint of the general practitioner is the title of an able lecture by John Madison Taylor.

Altogether the book contains a large amount of both useful and interesting material and, taken with the three preceding volumes of the same series, we have no hesitation in saying that the claim of the publishers, that the present year would be the best in the history of this now well known serial, has been sustained.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, January 3, 1902.

GEORGE E. ARMSTRONG, M.D., PRESIDENT IN THE CHAIR.

President's Address.

DR. JAMES PERRIGO delivered the annual address of the retiring President.

In vacating the president's chair, I am sure I am only echoing the sentiments of the members here present, that we are to be congratulated on having secured Dr. Armstrong as our next president; and I ask you in his behalf to give him the same kind consideration as you have given me during the past year. I thank you now for the honour you conferred upon me and the confidence you gave me. This last year has been an eventful one, as we have ceased our perambulations from one hall to another, and now occupy assembly rooms that no association need be ashamed of. This has not been accomplished without some labour, and our thanks are due to the different members of each committee that had the work in hand. The Bank is a considerate landlord, meeting all our requests with an open hand, even to the furnishing of the handsome lighting fixtures which have not cost us anything.

Of course, you will understand, our expenses have been heavier than usual. Furniture had to be purchased. This alone cost $593.84, and of this sum $335 was collected by special subscription from the members as a loan to be repaid when convenient. We have yet arrears to the amount of $635, and most of this is considered good. Altogether, at the beginning of the year, we had a cash balance of $527.16, and it is now at the end of this year $231.27. That the securing of these rooms has increased our attendance, is well shown by the Secretary's report as the average attendance for the whole year was forty. The year can well be divided into two sections: 16 meetings in the old rooms gave an average attendance of 35, and 10 meetings held here gave an average of 44. It is well to look back and see what has been our average attendance in past years:—1897-'98, 32; 1898-'99, 42; 1899-1900, 28; and 1900-'01, 40; and for the last ten meetings of this past year, 44. I do not think our average attendance will remain at this level, but I am sure now it will increase, and our rooms will be a central point of attraction in the afternoons and evenings for those who wish to consult journals and works of reference. This is a desirable object to be obtained, and every effort should be made to further the move and to secure at least the beginnings of a respectable library.

The last year has not been a barren one, as we have had 19 papers read, 51 case reports given, 31 pathological specimens shown, 27 living cases exhibited and 2 demonstrations. I cannot help mentioning one paper, that on general septic peritonitis, inasmuch as it was the means of bringing out a general discussion, such as we have not seen here for some time.

While our meetings have been characterized by a larger attendance than usual, I am sorry to say the discussions, with the exception of the last meeting, have been of a limited nature, and in saying this I would recall your attention to the fact that most of your work has been clinical in character. The case-reports have been all of general interest, where you would expect every member would have some opinion of his own and some experience to relate. I am afraid the tendency is here, as elsewhere, to leave the discussions to hospital men and consultants. This is a great mistake. If it is to be followed, the status of the general practitioner will suffer and he will stand on a lower platform in life than others. It is a mistake to suppose that a general practitioner cannot be a scientific man. The matter is wholly in his own hands, and it is only by plodding, persistent work, and never allowing an opportunity to pass by, that he will save the situaiton. The persistent work of the average man tells in the end, and he usually leaves something for the next generation to make use of. The brilliant man shines during the lifetime of his own generation, and is afterwards forgotten. Now, if the younger members of this Society would become more active in its welfare, and, I would add, their own, by the reading of papers, by the reporting of cases, or by the bringing in of cases, there is no doubt they would be doing themselves a great deal of good and also adding to the interest of the work and helping in the object for which this Society was originally founded. If a member reads a paper here, it is to be supposed that he will come with it as well prepared as he can. This he is obliged to do out of respect to the members. If he should be sharply criticized, he must not feel that it is a hint to bring no more papers. He must simply be fearless and defend his paper, advancing his own views and giving his own opinions with the same confidence as do his critics, and he will all the more recognize the fact that this is not a mutual admiration association. His paper would be of no benefit if it were not criticized, as in the criticism some new and important facts may be brought out.

The future success of the Society depends on its younger members, and if they become active now there will be no danger of the future. I have no doubt some of you will be saying:—"Well, this is very fine and sounds well, but what have you done?" I must admit I have done very little, and I am ashamed of it, but it is because I have been such a sinner in the past that I do not wish my example to be followed. A good many will say that a busy general practitioner has no time to do all this. Not so; he can always develop his powers of clinical observation if he has had the proper foundation laid by ample bedside instruction, of which there is not enough at the present time. He can always know enough of bacteriology to help him in his diagnosis, and he can always know enough of pathology to help him in his study of the course and the results of disease. Without this, we are apt to become routine men, and do not add anything to the national reputation of the profession. What a country requires and demands now from its medical men is good practical up-to-date work, and to be able to give this you are obliged to know what others are doing, both in the clinical field and in the laboratory. You will therefore understand the necessity of belonging to some medical association in an active manner. To go to meetings simply to pick up pointers is not laudable, but you should go prepared to take your share of the work.

We have now 199 members all told, of which 165 are "resident members." Fifteen of this number were new members who joined during the year. Four are "non-resident," and 30 "temporary" members, making a total of 199. We have lost two members, one by resignation and the other by death, the late Dr. Hopkins.

In conclusion, I have to say it is the earnest wish of your retiring President that our Society will now continue to prosper and to increase in members, and that we may attain such a position in the eye of the public that suggestions we may feel justified in making to public sanitary bodies, may at least receive a respectful consideration.

Tuberculous Disease of the Seminal Vesicles.

Dr. Turner showed for Dr. Armstrong a man who had been operated upon six weeks previously for tuberculous disease of the seminal vesicles. The patient had first noticed anything wrong in March, 1901, when he complained of constant pain in the testicle, which became swollen and finally broke down, leaving a sinus which discharged until August, 1901. He came into hospital and had the testicle removed, and the sinus remained closed for three weeks, when it opened again just at the root of the sacrum, the discharge being almost watery in character. At the operation, six weeks previously, the left seminal vesicle was found hard, insensitive and enlarged, and it, together with the vas deferens, was as dissected off by blunt dissection through a perineal section.

Cardiac Arythmia.

Dr. Kenneth Cameron presented a report of this case. It will be published in full in our next number.

Dr. W. F. Hamilton pointed out two peculiar features of the case, apart from the explanations offered by Dr. Cameron. One was the evident precipitation of the attacks when the physician entered the room, and the suddenness of the change from consciousness to unconsciousness. It was a question whether a functional condition might not have played a very important part in the case, apart from the phenomena. He asked if the patient had been the subject of any special habit, or whether he had partaken of any canned foods, such as fish, etc., as some features of the case were not unlike those of ptomaine poisoning. The mental state and the pallor corresponded to the Cheyne-Stokes respirations, and of course might be due to some cerebral stimulation or to some form of poisoning.

Dr. Wesley Mills asked regarding the character of the respiration.

Dr. Cameron stated that the respiration was only slightly disturbed when the heart was not beating.

Dr. Wyatt Johnston inquired regarding the quality of the heart sounds in the so-called normal beats, whether they were accentuated.

Dr. Perrigo asked if Dr. Cameron had any knowledge of the condition of this man's heart previous to the present attack.

Dr. Lafleur thought that cardiac epilepsy would be a very good name for the condition described, which seemed to him to be a neurosis.

Dr. Deeks related the particulars of two cases of his own, which he thought helped to explain the unconsciousness. They were young people, growing rapidly and suffering from periodical attacks of loss of consciousness. In one case, a young lady, the attacks always came on when she was called suddenly to the bedside of her mother who was suffering from cardiac disease. The other was that of a young man who used to faint when rising suddenly. Nothing special was found on examination of the hearts, but Lauder Brunton had described such conditions as due to cerebral anæmia. One could conceive that when convulsions ensued on the setting up of cerebral anæmia, there would be increased blood pressure and this would bring the heart back to its normal condition.

Dr. Wesley Mills congratulated Dr. Cameron on his beautiful graphic representation of the cardiac condition. He regarded the condition as most extraordinary, and knew of nothing like it from a physiological or clinical standpoint. The drawing suggested at once a cardiac inhibition through the vagus nerve. He presumed that the pallor might be wholly explained by the condition of the heart, without any reference to the arterioles, and the anæmia might explain the convulsive condition and also the loss of consciousness. Perhaps the most remarkable thing was the suddenness of transition from one condition to the other, especially in the matter of consciousness and convulsions.

Dr. Mills stated that the views with regard to cardiac rhythm had been somewhat modified of late by striking experiments made with solutions of sodium, calcium and potassium, so that some physiologists explained cardiac rhythm now purely from a chemical standpoint. In this case, owing to the shock with certain errors in diet and probable dilitation of the heart might there not have been alterations in some chemical constituents of the blood so that the rhythm of the heart was made to vary. It was, however, all a matter of speculation with regard to this case, the facts of which sounded like a clinical romance.

Dr. Cameron, in reply, said that he had never seen the old gentleman before. He had never had occasion to consult a physician since coming to this country, forty years before. He had been troubled with flatulency and a good deal of intestinal distress and constipation, but he was unable to say whether he had eaten any canned goods or anything likely to lead to ptomaine poisoning. As to the quality of the heart beat, he was unable to give very definite information as it was impossible to follow it. The diaphragm represented the pulse. He seemed to have a soft mitral murmur at first, but this disappeared after his recovery. With regard to the transition state, perhaps the idea of its rapidity had been somewhat exaggerated. It took about two seconds or so. The patient had been observed for about two hours on the first occasion, and one and a-half hours on the second occasion, and the notes presented were made at the time.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK,
A. D. BLACKADER,
GEO. E. ARMSTRONG,
WILLIAM GARDNER,
F. G. FINLEY,
JAMES STEWART,
J. GEORGE ADAMI,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. MARCH, 1902. NO. 3.

DAILY MEDICAL INSPECTION OF SCHOOLS.

It is universally conceded that the primary education of every child is a subject demanding the supervision and fostering care of the Government. In many states in Europe attendance at schools maintained by public rates is compulsory. Throughout America it is felt that public opinion is so strongly in favor of education that it is not necessary to enforce attendance by compulsory measures; nevertheless the duty of the State is recognized in the maintenance by public rates of schools in which every child may obtain free a good primary education, sufficient to enable him intellectually to become a good citizen.

With this assumption of duty by the State comes the responsibility of taking precautions that the child while receiving intellectual benefit shall not receive physical harm, its health shall not be impaired, nor any avoidable risk of contracting disease be incurred. This responsibility has in some degree been met in the past by a regular inspection of the condition and the appointments of the various school houses to ensure that they conform to known laws of health. The lighting of the school room, its heating and ventilation, the shape and height of its desks and seats, and the hygienic condition of its closets, must all be regarded as of the greatest importance to the health, development, and future well-being of the scholars ; any neglect of such inspection must be regarded as a distinct breach of trust on the part of those in control.

Recently, however, in many cities a still further advance has been made by the daily inspection of the scholars themselves in regard to matters of personal hygiene and the presence of disease of all kinds, but especially of contagious disease. The first important movement in this direction was made in Brussels by Dr. Jannsens, who in 1874 obtained the appointment of Medical Inspectors for the various public schools, whose duties were not only to supervise and report on the school rooms, but also to inspect the children attending the school and to report on the condition of their health, and the presence of disease among them. In the report of these inspections for the year 1880 it is stated that attention had been given, not only to faults in the construction of the room and its appointments, its temperature and the amount of vitiation of the air, but also to the condition of each child, to the form and extent of gymnastic training it received, to the care of the eyes, ears, teeth, skin and body, to the duration of the lessons, and to the frequency of open-air instruction. Accurate anthropometrical records had been kept as an excellent guide to the condition of health of each pupil ; at the same time careful watch had been kept on all children showing symptoms of disease, and rigid regulations had been made for the isolation of all infectious diseases. As a result of their supervision it was stated that at the time of the report there had been no epidemic of infectious disease in Brussels since their methods had been carefully carried out, although in other cities of Belgium and throughout Europe severe epidemics had occurred.

The marked success which attended this work attracted the attention of physicians and sanitarians throughout Europe and in America and new regulations calling for the more or less frequent hygienic and medical inspection of schools were promulgated in all the more important educational centres. In 1875 the French Minister of Public Instruction issued a circular to the prefects of all the departments of France directing that inspection should include both the hygienic conditions existing in the school and the health of the individual pupils. In Switzerland, in Italy, in St. Petersburg and in several of the larger towns in Germany, medical inspection of the scholars as well of the school room was instituted.

In the United States the regular hygienic inspection of scholars in the public schools was urged as early as the year 1875 by many eminent physicians, and strong representations were made to the Boards of Health both in Boston and New York to have medical inspectors appointed for this purpose. Not, however, till the year 1890 were these representations successful in Boston. In this year the Board of Health divided the city into fifty districts, giving an average of about four school houses and 1400 pupils to each district. Well-qualified and discreet physicians were readily found to undertake for a small honorarium the duties prescribed. These were as follows: A daily visit was made to each school shortly after the beginning of the morning session, and an inspection made of all children reported by the teachers as showing any symptoms of illness. If a child was found too sick to remain in school it was sent home with a card stating the reason and recommending it to the care of its parents and their family physician: prescribing by the inspector was forbidden. If there was any symptom of contagious disease the case was at once reported to the Board of Health. In the examination of the children in the school it was directed that every facility was to be given to the doctor, while at the same time he was requested to reach his conclusions with the least possible delay and annoyance to the school.

In the report of the Boston Board of Health for 1896, it is stated that from November 1st, 1894, to October 31st, 1895, the number of children examined was 14,666. Of these 9,188 were found to be sick, 1,745 were ill enough to be sent home; of these 437 had some infectious or contagious disease.

Under the stimulus of the daily medical inspection, it was found that teachers became quicker and more expert in the detection of existing illness, sick children were promptly isolated, the danger of contracting infection was minimized and parents felt secure, even during the prevalence of disease in allowing their children to attend school. The number of children saved in this way from disease, possibly of a fatal character, is beyond computation, for undoubtedly the contact of children with one another in school is the most frequent method in which the contagions of the various infectious diseases are transmitted.

Statistics very similar to the above are to be found in the Reports of the boards of Health for New York from 1896 to 1899, and also in the Reports of the Boards of Health of Philadelphia and Chicago.

Not only does such an inspection do much for the direct well-being of the child itself, but it has an important influence in educating the scholars generally to the importance of hygiene, of pure air and good water, and of cleanly habits and surroundings, and through them has an ultimate effect on the general mass of the people.

Our attention has been called to this subject by the very excellent address delivered before the Montreal Medico-Chirurgical Society by Professor Ruttan, and the paper which appeared in our last issue by Dr. Tait McKenzie, who has worked for some years among the youth in this city to develope physical culture under careful medical supervision. That such a state of affairs as recorded by Dr. Church, whose paper appears in this issue, should be permitted, certainly speaks very little for the supervision exercised by the Board of Health in this city over our public schools, and we earnestly hope that the resolution adopted by the Society will receive the careful consideration of both our Boards of Education.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

Apropos of the coming meeting in Montreal (June 17, 18, 19 and 20), of the American Medico-Psychological Association, a few words as to the origin, constitution and objects of the organization might not be amiss.

The honor of first proposing the formation of the society is due to Dr. Samuel B. Woodward, Superintendent of the Massachusetts State Lunatic Hospital, at Worcester, and Dr. Francis T. Stribling, Superintendent of the Western Lunatic Asylum of Virginia, at Staunton. During a visit paid by the former to the latter, it was felt that the mutual benefit derived from their exchange of views on asylum management, made it but reasonable to suppose that the cause of the insane would be materially promoted by the meeting together at stated periods, for consultation, of all those in charge of similar institutions. It was accordingly arranged between them that Dr. Woodward should, on his way home from Virginia, call upon Dr. Thomas S. Kirkbride of the Pennsylvania Hospital for the Insane, at Philadelphia, and that they should, by mail or personal interview, confer with Dr. William M. Awl of the Ohio Lunatic Asylum, Columbus, and others interested in the good work.

The result was a meeting of medical superintendents of asylums at a then famous hostelry, Jones' Hotel, in Philadelphia, on October 16th, 1844, and the organization of an association, which it was resolved should be known as "The Association of Medical Superintendents of American Institutions for the Insane." It was further resolved that the medical superintendents of the various incorporated or other legally constituted institutions for the insane then existing in the

United States, or which might be commenced prior to the next meeting, should be elected members of the Association. At the following meeting, the scope of this resolution was enlarged so as to include the medical superintendents of all asylums on the continent.

The officers appointed at the first meeting were Dr. Samuel B. Woodward, President ; Dr. Samuel White, Vice-President ; and Dr. Thomas S. Kirkbride, Secretary and Treasurer.

It will thus be seen that the American Association is but three years the junior of the Medico-Psychological Association of Great Britain and Ireland, that body having been formed in June, 1841, and held its first annual meeting at Nottingham, in November of the same year.

Of the thirteen members present at the first meeting in Philadelphia, known among American alienists as the "Original Thirteen," all have passed to the bourne whence no traveller returns, Dr. Pliny Earle, the last, but by no means the least of that glorious band, departing this life on May 17th, 1892. But, though gone, the good work of which they laid the corner-stone stands as an everlasting monument to their greatness, benevolence, and philanthropy.

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs. He most lives,
Who thinks most, feels the noblest, acts the best."

Even a very brief summary of the cardinal principles laid down on all important subjects relative to the care of the insane, at the early meetings of the Association, would require more time and space than can be here accorded. They covered a vast territory, embracing the construction and organization of hospitals for the insane ; the medical, moral, and hygienic treatment of mental disorders; the statistics, causes, and prevention of insanity ; the legal principles which should govern in the jurisprudence of insanity, etc., etc. Suffice it to say, that so broad and comprehensive were the foundations then laid that they form, even to this day, the basis of asylum management.

In 1892, the name of the organization was changed to the American Medico-Psychological Association, which it now bears, and its object re-defined as "The study of all subjects pertaining to mental disease, including the care, treatment, and promotion of the best interests of the insane." The active membership was made to include physicians resident in the United States and British America, especially interested in the treatment of insanity.

From its birth, in 1844, up to the present date, the Association has met yearly, with one exception. In consequence of the disturbed state of the country caused by the outbreak of the great civil war, in April, 1861, the meeting set for that year, at Providence, Rhode Island, was postponed to 1862. In all that time, the organization has assembled but three times on Canadian soil, namely, at Quebec, in 1858, and at Toronto, in 1871 and 1881. This year it holds its fifty-eighth annual convention in Montreal never before honored by its presence, on invitation of the Medico-Chirurgical Society, and it behooves all members of the profession to put forth their most strenuous efforts to make its initial visit here a success, and to do honour to a society which has aided so largely in securing to American hospitals for the insane a reputation that places them on a par with any in the world. The present officers of the Association are: Dr. R. J. Preston, of Marion, Va., President; Dr. G. Alder Blumer, of Providence, R.I., Vice-President; and Dr. C. B. Burr, of Flint, Mich., Secretary and Treasurer.

The gathering will probably include not less than one hundred and fifty of those who have devoted their lives to the care of the mentally afflicted, among them many of the foremost alienists on the continent, and proposed functions incident to the occasion are addresses of welcome by the Lieutenant-Governor of the Province, the Mayor of Montreal, and the President of the Montreal Medico-Chirurgical Society. The delivery of the annual address, a task always delegated to one outside the ranks of the Association, has been entrusted to Dr. Wyatt Johnston, who has selected for his subject, "The Medico-Legal Appreciation of Trauma in its Relation to Abnormal Mental Conditions."

The Committee of Arrangements, appointed by the Association at its last meeting, held in Milwaukee, Wis., consists of Dr. T. J. W. Burgess, Dr. G. Villeneuve, Dr. J. V. Anglin, Dr. E. Philippe Chagnon, and Dr. James Perrigo, of Montreal, and Dr. A. Vallee, of Quebec. This committee has selected the following gentlemen to assist in making fitting preparation for the entertainment of our distinguished visitors : Dr. G. E. Armstrong, Dr. T. G. Roddick, Dr. Jas. Stewart, Dr. A. Macphail, Dr. F. J. Shepherd, Dr. A. R. Marsolais, Hon. Dr. Jas. Guerin, Dr. E. P. Lachapelle, Dr. R. Boulet, and Dr. F. Devlin.

The headquarters of the Association will be the Windsor Hotel, there the ladies' ordinary has been secured as a meeting room for the reading of papers, many of which of a highly interesting character have been promised ; and the transaction of other business.

A LESSON FOR THE ANTI-VACCINATORS.

A most striking object lesson to the anti-vaccinators and one which would have been hard to improve upon had it been prearranged, has been furnished by the experience of a Dr. Immanuel Pfeiffer of Boston.

The story, the facts of which we glean from the *Boston Medical and Surgical Journal*, is of more than ordinary interest.

Dr. Pfeiffer, it seems, has been for years one of the most aggressive, and withal the most consistent, of the opponents of vaccination and of late has been giving the municipal authorities of Boston considerable trouble. As an outcome of the strength of the opposition aroused by him, the chairman of the Board of Health of Boston offered to allow any unvaccinated person, who desired to do so, to visit the smallpox hospital. No notice was taken of this at the time, but Dr. Pfeiffer subsequently applied for permission, giving as a reason that he wished to study the disease. The doctor, however, had only been vaccinated about 60 years before in childhood. The visit was made on January 23rd, and due precautions were taken at the time to prevent his carrying away infection on his clothes. Great publicity was given to his visit, both by the daily papers and by his appearing on the 28th before the committee on Public Health as a petitioner for the abolition of compulsory vaccination. Here he asserted that anyone, like himself, who had not been vaccinated for 60 years could expose himself to the danger of infection with impunity. Meanwhile the Board of Health, looking upon him as a suspect, had kept careful watch of his movements, and when he did not appear at the next meeting of the public health committee, 12 days after his exposure, search was made for him. It was not until four days later that they were able to locate him at his country residence in Bedford, where he was found to be seriously ill with smallpox, although his exposure to the infection had lasted not more than an hour. In contrast to this is the fact that of all the physicians and nurses in attendance at the hospital during the whole winter, not one had contracted the disease.

While there is nothing unusual in the contraction of the disease in the manner described, the great publicity which had been given to the matter by the victim himself and the way in which he was "hoisted with his own petard," will serve, we hope, as a wholesome lesson to these members of our profession who deny the most firmly established principles.

McGILL MEDICAL LIBRARY REPORT.

Quarter Ending Jan. 31st, 1902.

Adami, J. G., M.D.
  Set of Abstracts of The Congress of London, 1901.
  Doctors and Patients, by John Timbs, 1873.
  Medical and Surgical Reports of Presbyterian Hospital, 4 Vols.

American Dermatological Association, 1901.

American Laryngological Association, 1901.

American Microscopical Association, Vols. vii-xx.

American Surgical Association, Vol. ix.

Association of American Physicians, Trans., 1901.

Association of American Librarians.

Archives of Dermatology, 8 vols.
Brief Essays on Orthopœdic Surgery, by Shaffer, 1898.
Phosphorus Necrosis of the Jaws, Mears, 1886.
Evacuant Medication, Field, 1887.
Trans. of the America Pedriatric Soc., 1900 and 1897.
Phil. County Med. Soc., Semi-Cent. An., 1899.
Nature and the Consequences of Anomalies of Refraction, 1899.
Treatise on Amputations of the Extremities and their Complications, Watson, 1885.
Medical Diagnosis, Brown, 1898.
Students' Medical Dictionary, 1899, Gould.
Histology, 1898, Stöhr.
Virginia Medical Monthly, 5 vols.
University Med. Magazine, 3 Vols.
Trans. Miss. Valley Medical Assoc.
Boston Medical & Surg. Journ., 3 vols.

Barwise, — M.D.

Purification of Sewage, 1899.

Boston City Hospital Report, 1901.

Blackader, A. D., M.D.

Therapeutic Gazette, 3 vols.
A yearbook of Treatment, 8 vols.
Therapeutics & Materia Medica, 1887, Edes.
Materia Medica, 1899, Schleif.
Materia Medica & Therapeutics, 1900, Shoemaker.
Materia Medica, etc., 1894, White.
Veterinary Medicines, 1892, Dun.
Veterinary Materia Medica, 1896, Hossloch.
Commercial Organic Analysis, 1892, Allen.
Earle, C. W., Memorial Addresses.

Bristol City Health Report, 1900.

Bruxelles University.

Annual Academy Report, 1900-01.

Bulkley, L. D., M.D.

Syphilis in the Innocent, 1894.

Birkett, H. S., M.D.

Universal Medical Journ., 3 vols.
Sympathetic Disease of the Eye, 1881, Manthner.
Internat. Med. Annual, 1893.
Hysteriques, 1883, Soulle.

Canadian Society of New York.

Yearbook.

Clinical Soc. Trans., London, Vol. 34.

Dermatological Soc. of Great Britain and Ireland, 1900-01.

Fischer, H. S., M.D.

Vademecum Obstetrique et Gynæcologie, 2 vols., 1902.

Geological Survey of Canada, Vol. xi., with maps.

German, W. H., M.D.

Purdy's Practical Urinalysis and Urinary Diagnosis, 1901.

Gibson, James A., M.D.

The Nordrach Treatment for Consumption in this country.

Harvard Alumni Association, Quarterly No., 1902.

Johns Hopkins Hospital.

Journal of Comparative Neurology.

Johnston, Wyatt, M.D.

Zeta Psi Fraternities of North America, 1899.
Microtomists Vade Mecum, 1885, Lee.
Massachusetts State Board of Health, 1899.
Handbuch der Vergleichenden Histologie u. phy. der Hauss-augelthien, 2 vols., 1890-2.
Vierteljahrsschrift f. Gerichtlische medicin, 1893.
Crime en pays Créoles Corre, 1889.
Bowdoin Bugle, 1898.
Vierteljahresschrift f. Gerichtliche medicin, 1894.
Diphtherie, 1884, Rothe.
Catalogue of the Surg. and Med. Section of U.S.A., 2 vols., 1866-7.

Liverpool School of Tropical Medicine.

Louisiana Medical Society, Trans., 1901.

Louisiana State Board of Health, 1901.

Massachusetts State Board of Health, 1901.

Medical Society of London, Trans., Vol. 24.

Meyer, B. E., Esq.

History of Modern Philosophy, 2 vols., 1900.

McGill Med. Faculty Post Graduate Teaching Staff.

Lectures on the History and Development of Chemistry, Ladenburg, '00.
Alembic Club Reports, 15 vols.

Michigan State Board of Health, Annual Report.

Michigan State Board of Health, Vital Statistics.

Mississippi Valley Medical Association, 1899-1900.

Montreal Medical Journal, editors.

Index Catalogue Library Surg.-Gen'l.'s Office. U.S. Army.
Cleveland Medical Gazette, 1899-1900.

New Hampshire Medical Soc., Trans., 1901.

Oliver, Geo., M.D.

Contribution to the Study of Blood and Blood Pressure, 1901.

Osler, Wm., M.D.

Harvey Anatomical Exercitations, 1653.
Practice of Medicine, 1901.

Porter, W., M.D.

Introduction to Physiology, 1901.

Roseneau, M. J., M.D.

Report U.S. Marine Hospital Service.

Stupart, Prof., R. F.

Report of Meteorological Survey of Canada.

Surgeon-General's Library, U.S.

Index Catalogue, Vol. 6.

Taylor, G. G., M.D.

Thompson-Yates Laboratory Report, Vol. 4, pt. 1, 1901.

Tubby, A. H., M.S., F.R.C.S., London.

Clinical Lectures on Various Forms of Intra-abdomiral Suppuration, 1901.

U.S. Dept. of Agriculture.

Report on Irrigation Investigations of California, 1901.

U.S. National Academy of Sciences, 15 vols.

U.S. National Museum.

Birds of North America.

University of Michigan.

Dental Journal, No. 1.

Wilkins, G., M.D.

Journal of the Royal Microscopical Soc., 10 vols.

Wisconsin University. Agricultural Experiment Station, Report, 1899.

Pamphlets, Reprints, Calendars, etc.

Bengal Government. Notes on Vaccination, 1901.
Berlin University Library. 12.
Berry, John M. 1.
Bombay Government. 1.
Earp, Saml., M.D. 1.
Grand Trunk Railway System. 1.
Jones, Vernon L., M.D. 1.
Landis, H. R. M., M.D. 2.
Lying-in-Hospital of New York. 1.
Manchester City. 1.
Michigan State Board of Health. 11.
New York Agricultural Experiment Station. 4.
Northwest Provinces and Oudh Government. 2.
Owens College, Manchester. 1.
Philadelphia College of Physicians. 1.
Plague Research Laboratory, Parel, Bombay. 12.
Punjab Government. 1.
Royal College of Surgeons, Eng. 1.
Smithsonian Institute. 32.
Trudeau, E. L., M.D. 1.
U.S. Dept. of Agriculture. 22.
University of London, Royal Free Hospital School. 1.
University College, London. 1.
Wurzburg University Library. 22.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Pamphlets, Reprints, etc.

Observations on Blood Pressure with Special Reference to Chloroform. By R. D. Rudolf, M.D., Edin., M.R.C.P., Lond., Toronto. Reprinted from the Trans. of the Canadian Institute, Vol. VII. 1900-01.

The Evolution of the Ophthalmoscope and What it has done for Medicine. By Samuel Theobald, M.D. N. Y. Med. Jour., June 22, 1901.

Thermol in Typhoid Fever. By Oliver L. Miller, M.D. Inter. Med. Mag., Feb., 1901.

Devitalized-Air-Toxæmia, a Primary Cause of Tuberculosis. Charles Denison, A.M., M.D. N. Y. Med. Jour., Nov. 9 and 16, 1901.

The Uses of Tuberculin. By Charles Denison, A.M., M.D. Jour. Amer. Med. Assoc., Feb. 8, 1902.

Some New Points in Regard to Reynaud's Disease. By Carl Beck, M.D. Amer. Jour. of the Med. Sciences., Nov., 1901.

Some New Instruments and Modifications. By Emil Amberg, M.D., Detroit, Mich.

The Cataphoric Treatment of Cancer. By G. Betton Massey, M.D. Trans. Amer. Elec. Therapeutic Association, 1900.

The Doctor's Fee. By John B. Roberts, M.D.

Congenital Anterior Dislocation of the Tibia Treated by Arthrotomy. By John B. Roberts, M.D. Annals of Surgery, August, 1901.

Roentgen Rays in the Treatment of Diseases of the Skin. William Allen Pusey, A.M., M.D.,Chicago. Jour. Amer. Med. Assoc., Sept. 28, 1901.

The History of the Development of Medical Science in America as Recorded in the American Journal of the Medical Sciences. By H. R. M. Landis, M.D.

Simple and Ethereal Sulphates. A Simple and Rapid Method for their Separate Determination—Thirty Minutes. G. W. McCaskey, A.M., M.D. Jour. Amer. Med. Assoc., Mar. 31, 1900.

The Relation of the Medical Editor to Original Communications. By Harold N. Moyer, M.D. Annals Gyn. and Ped., July, 1901.

Malarial Hæmoglobinuria. Otto Lerch, A.M., M.D., Ph.D. New Orleans Med. and Surg. Jour., Nov., 1901.

Dermoid Tumours. By William Davis Foster, M.D. North Amer. Jour. of Homœopathy.

An X-Ray and Dissection of the Ureter and Utero-Ovarian Artery. The Utero-Ovarian Vascular Circle. Byron Robinson, B.S., M.D.

Remarks on the Treatment of Diabetes Mellitus. R. T. Williamson, M.D., Lond., F.R.C.P. Medical Chronicle, August, 1901.

The Value of Electrolytic Dilatation of the Eustachian Tubes in Chronic Tubal Catarrh and Chronic Catarrhal Otitis Media. Arthur B. Duel, M.D. Amer. Jour. Med. Sciences, April, 1900.

The Relation of Outdoor Life to High Altitude Therapy. By Charles Denison, A.M., M.D. Denver, Colorado.

Deformities, Congenital Multiple—Arms and Legs—Femurs Deficient. By DeForest Willard, M.D. Trans. Amer. Ortho. Assoc., 1900.

Aneurism of the Thoracic Aorta of Traumatic Origin ; Treatment by Introduction of Wire and Electricity. By DeForest Willard, M.D. Univ. of Penn. Med. Bulletin, Sept., 1901.

Removal of Foreign Bodies from the Air Passages. By DeForest Willard, M.D. Jour. of the Amer. Med. Assoc., Oct. 26, 1901.

What Routine Shall we adopt in Examining the Eye Muscles ? Alex. W. Duane, M.D. N.Y. Med. Jour., May 25, 1901.

A New Clinometer for Measuring Torsional Deviations of the Eye, Delimiting Paracentral Scotomataand Metamorphopsia and Detecting Simulaiton of Blindness. Alex. Duane, M.D. Phil. Med. Jour., June 2, 1901.

Some Thoughts on the Ethics of Medical Journalism. Burnside Foster, M.D. Annals of Gyn. and Pediat., Q., 1901.

Surgical Treatment of Palatal Defects. Truman W. Brophy, M.D., D.D.S., LL.D. Dental Cosmos, April, 1901.

Obituary

RICHARD MAURICE BUCKE, M.D.

Rarely has the news of the death of one of our professional brethren come with a greater shock or occasioned more profound sorrow than that of Dr. R. M. Bucke, Medical Superintendent of the Asylum for Insane, London, Ontario, and the genuine regret expressed thereat by all sections of the community, to which he was widely known, leaves no doubt that his merit and devotion to public duty were appreciated in a degree commensurate with their just claims. His splendid physique, buoyant spirits, and correct habits bespoke for him much more than man's allotted span of years, but alas ! no physical strength can safeguard against accident, and to accident was due the loss of this truly valuable life.

Dr. Bucke, it appears, had just driven home from the city, and about 11.30 p.m., February, 19th, preparatory to retiring for the night, walked out alone on the verandah of his house on the asylum grounds to enjoy the beauties of the moonlit winter night. A few minutes later his family heard the sound of a fall, and, hurrying out, found that he had evidently slipped on a piece of ice, and falling, had struck heavily on the back of his head. He was immediately lifted and carried into the house, but life was already extinct. Drs. McCallum and Beemer, who were summoned without delay, found death to have been caused by concussion of the brain and hæmorrhage.

Richard Maurice Bucke was born at Methwold, Norfolk, England, March 18, 1837. On the side of his father, an English Church clergyman, the Rev. Horatio Walpole Bucke, he was descended from Sir Robert Walpole, first Earl of Orford, his mother, prior to her marriage, being a Miss Clarissa Andrews of Milden Hall, Suffolk. When he was only a year old, the family removed to Canada, where they settled upon a farm near the then village of London, Ontario, within a few rods of the spot where in later years was to be erected the asylum which, for nearly twenty-five years, he so ably superintended.

Schools at that time were few and inferior, and the early education of Maurice and his brothers was conducted by their father, who was a graduate of Trinity College, Cambridge, a fine linguist, and the possessor of a large and varied library to which the lads had free access. Later, he attended for a short time the London Grammar School.

In 1853, when but sixteen years of age, the boy, having lost his father and mother, left home and made his way to California overland, on foot, returning by the Isthmus of Panama in 1858. During these five years of wandering through the Middle, Southern, and Western States, he saw much wild life in the placer mining districts of Nevada, and underwent many hardships. Crossing the continent, on the Humboldt River, midway between Salt Lake and California, he and his party fought for their lives half a day with the Shoshone Indians,—nearly died of thirst, and afterwards were well nigh starved to death. Later, in the fall of 1857, with a single companion he was lost in the Sierra Nevadas. They had been unavoidably delayed in starting to cross the mountains, and when half way over were caught in a blinding snow storm. For nearly a week they were shut up in a little valley in the heart of the mountains, and had to kill their pack-mule for food while waiting for the storm to cease. At last they forced their way across the divide, but were again arrested by the snow, and, having lost the trail, wandered aimlessly along, endeavouring to follow the course of a small stream downward. After five days and four nights, stumbling through the deep snow, without food or fire, and badly frozen, they struck a small mining camp in the mountains. Here his companion died from exhaustion, the result of the privations he had undergone, while Maurice himself was confined to bed for months, but escaped with the loss of one of his feet, which had to be amputated.

On his return to Canada, through a small sum of money left him by his dead mother, he was enabled to enter upon the study of medicine at McGill University, Montreal. His mind, after lying so long fallow, absorbed ideas with extraordinary facility, and he graduated therefrom as first prizeman, in 1862. The following two years were spent in additional professional study in England and France, after which he made a second trip of a year's duration to California in the interest of the Gould and Curry Silver Mining Company, on business connected with the celebrated Comstock lode.

Returning again to Canada, in 1865, he settled at Sarnia, Ontario, where he was married, the same year, to Miss Jessie M. Gurd, of Moore, Ontario, who, with four sons and two daughters, survives him. Here he continued the practice of his profession up to 1876, when he was appointed Medical Superintendent of the Asylum for Insane at Hamilton, Ont. The succeeding year, on the death of Dr. Henry Landor, he was promoted to the superintendency of the London Asylum, of which institution he continued in charge up to the time of his death.

During his asylum career, Dr. Bucke evinced wonderful ability in the care of the insane, his constant endeavour being to administer the interests confided to his charge by the Province, intelligently, faithfully and economically. He had long been regarded as one of the leading authorities on the subject of mental diseases, and his services as an expert were sought in most important cases where sanity was in question. His *confrères'* appreciation of his abilities as an alienist was evinced by his selection, in 1897, to preside over the Psychological Section of the British Medical Association, which met in Montreal, and by his election, in 1898, to the Presidency of the American Medico-Psychological Association. He also held the professorship of Mental and Nervous Diseases in the Western University at London. To him is due the introduction in America, in 1883, of the absolute non-restraint system, which is now the accepted principle in the treatment of the insane throughout nearly all American institutions. This fact is of special interest and worthy of record, as at that time nearly every superintendent on the continent regarded the doctrine of absolute non-restraint as purely utopian, and to be ridiculed accordingly. To-day scarce one is bold enough to advocate the use of mechanical restraint, except for surgical or other very exceptional purposes.

Another important reform in Canadian asylum management inaugurated by Dr. Bucke was the discontinuance, as a beverage for the patients, of all beer, wine and spirits. In this step he was largely influenced by the precepts and teachings of his friend Sir Benjamin Ward Richardson. In recent years, too, he had devoted much time and thought to the benefit of systematic gynæcological surgery in the treatment of insane women, his published results in this respect showing the urgent necessity for always removing physical disease, where it exists, as a step toward the relief of mental alienation.

Dr. Bucke was a man of scholarly tastes and habit,—a man of wide cultivation and grasp of mind,—a man in whom were united intellectual and moral forces not often found combined. A realist as regards all the details incident to the proper discharge of his official duties, he was nevertheless an idealist and lived in a world of his own mental creation. The natural powers of a strong mind were in him refined by literary culture, his work never preventing his devoting a certain portion of the day to reading. In this way he kept in touch with all that was going on in the world, and had an intimate knowledge of most of the new works in literature and science. The wielder of a facile pen, he was one of the original Fellows of the Royal Society of Canada, having been chosen by its founder, the Marquis of Lorne, Governor-General of the Dominion, now the Duke of Argyle, as a representative on the English Literature Section.

In addition to his earliest work, "Man's Moral Nature," published 1879, in which he traces the development of the moral nature and contends that its physical basis is the great sympathetic nervous system, Dr. Bucke was the author of a large number of papers, dealing directly or indirectly with the subject of mental evolution. Throughout all of them is maintained the opinion that the human mind has been slowly evolved by a species of unfolding, or growth, extending over millions of years, and that, in process of time, new faculties, even new senses, will probably be evolved. His latest work, "Cosmic Consciousness," published last year, is an epitome of all these, the product of thought and work extending over a period of nearly thirty years. In this he describes and traces the origin of a new faculty, now in course of development in the human race. To this faculty he gives the name cosmic consciousness. As he himself puts it, the object of the work is to show ;—"That the human mind is now in the very act of making this supposed step ; is now in the very act of stepping from the plane of self-consciousness to a higher plane than it, which I call Cosmic Consciousness." The nature of the new faculty is thus described, and contrasted with the simple consciousness of the higher animals and self-consciousness, by the possession of which man is distinguished from the brute creation.

"Cosmic Consciousness is a third form (of consciousness), which is as far above Self Consciousness as that is above Simple Consciousness. With this form, of course, both simple and self consciousness persist (as simple consciousness persists when self consciousness is acquired), but added to them is the new faculty so often named and to be named in this volume. The prime characteristic of cosmic consciousness, as its name implies, is a consciousness of the cosmos, that is, of the life and order of the universe. There are many elements belonging to the cosmic sense besides the central fact just alluded to. Of these a few may be mentioned. Along with the consciousness of the cosmos there occurs an intellectual enlightenment or illumination, which alone would place the individual on a new plane of existence—would make him almost a member of a new species. To this is added a state of moral exaltation, an indescribable feeling of elevation, elation and joyousness, and a quickening of the moral sense, which is fully as striking and more important both to the individual and the race than is the enhanced intellectual power. With these come, what may be called, a sense of immortality, a consciousness of eternal life, not a conviction that he shall have this, but the consciousness that he has it already."

Among the many possessors of the new faculty enumerated by Dr. Bucke, the following thirteen, he says, "are so great that they can never fade from human memory," Gaudama the Buddha, Jesus Christ, St. Paul, Plotinus, Mahommed, Dante, Las Casas, John Yepes, Jacob Behmen, William Blake, Balzac, Walt Whitman and Sir Francis Bacon.

Bacon, be it borne in mind, is with Dr. Bucke synonymous with Shakespeare. In these, as in all other cases of cosmic consciousness, there were certain phenomena connected with the on-coming of the new faculty, the most striking of which was a sudden sense of being immersed in flame or in a brilliant light,—this occuring entirely without warning or outward cause. From among those blessed with the new consciousness I might cite the following descriptions of individual experience with regard to this peculiar light.

Paul (in his speech to Agrippa) said : " As I journeyed to Damascus I saw on the way a light from heaven, above the brightness of the sun." Then he heard the voice.

Dante gave an account of the on-coming of the cosmic sense in these words : " On a sudden, day seemed to be added to day, as if He who is able had adorned the heaven with another sun."

Whitman described it thus :—

" As in a swoon one instant,
Another sun, ineffable, full dazzles me,
And all the orbs I knew—and brighter unknown orbs ;
One instant of the future land, Heaven's land."

Of other literary work from the pen of Dr. Bucke, the most notable is his biography of Walt Whitman, published in 1882, which is still the standard work on the subject. No one could have been better fitted for such a task than Dr. Bucke, who had been a life-long friend of the " Good Grey Poet," one of whose literary executors he was, and who was the possessor of the largest and best Whitman collection of books and manuscripts in the world.

Dr. Bucke was also an ardent partizan in the Bacon-Shakespeare controversy, and claimed to have discovered absolute proof of the Baconian authorship of the Shakespeare plays within themselves. This proof he had expected very soon to publish in extended form.

Take it for all in all, where shall one seek for a life of greater usefulness than that, the loss of which we now mourn ? Sadly shall we miss the sight of his picturesque, Whitmanic garb and face full of strong character, the sound of his bluff, cheery voice, and the hearty grasp of his hand,—and not one of us but will fervently echo the wish.—

" Oh for the touch of a vanished hand,
And the sound of a voice that is still."

In the death of Dr. Bucke Canada loses one of her foremost minds, psychiatry one of its ablest exponents, McGill one of her most distinguished graduates, and, saddest of all, his family a devoted husband and father. Peace to his ashes.

Proceedings of the McGill Medical Society of Undergraduates.

MALARIA, FROM MARSH POISON TO MOSQUITO BITE.

BY

STANLEY P. THOMAS.

From the earliest period in the history of medicine the question "What is malaria?" had been asked, but the answer had not been forthcoming. Theories innumerable were advanced only to be rejected each in its turn. It remained for the closing years of the 19th century, the century marked by so great advances in medical science generally and in its methods of observation in particular, to bring forth a solution of the problem,—a solution so complete, that now in the opening year of the 20th century, it can be said that malaria is one of the few diseases that can be positively diagnosed and rationally treated. Truly an important statement with regard to a disease which has been estimated to cause one half of the mortality of the human race and has been styled by one of the older writers "the Destroying Angel," to whom the task of keeping man within bounds has been specially assigned.

The word "malaria," as it is used to-day, has not the same significance as with the older writers. Dr. Barner in the Fothergillian Prize Essay of 1859, used malaria in its wide sense, "that is to say, air or a gas, or a compound of gases, which being absorbed by the lungs, gives rise to certain specific effects or symptoms which grouped together constitute a disease. But by the profession generally the word has been restricted to the train of symptoms caused by certain organisms which exist in the red corpuscles of the blood, and are called hæmamœbidæ or plasmodia malariæ.

The frequent references to the different forms of malarial fever show that the dire effects of the disease on the human system were well known to the earliest physicians. Hippocrates mentions the enlarged spleen, emaciation and diarrhœa, which he attributed to the drinking of marsh water. Galen and Avicenne refer to the exhalations from marshes, the latter attributing the evil effects produced to decaying vegetable matter. Lancisi in Italy, was the first to demonstrate that the disease was caused by a material substance. In 1695, he wrote his treatise, "De noxis paludis effluvis," championing the cause of the "marsh poison" as the malarial agent. This poison he considered to be generated from stagnant waters containing the debris of animal and vegetable matter. The theory of the aëriform nature of the disease was accepted for many years, but all attempts to demonstrate by chemical means the poisonous ingredient of marsh air were without success. Hydrocyanic acid and sulphuretted hydrogen were suspected and accused and as vehemently defended. Livingstone observes of the Zambesi, "the flood water ran into a marsh some miles above the mountain and became as black as ink, and when it returned again to the river emitted a strong effluvium of sulphuretted hydrogen. We spent one night in it and suffered no ill effects, though we fully expected an attack of fever."

As the inorganic matter was shown to be incapable of being the agent of the disease, it was thought that the characteristic toxic effects might be brought about by the less known organic matter. A supporter of this theory defines it as being "a ferment which is probably a highly complex nitrogenous substance capable of being dried and carried by the wind far from the place where it was produced." Beneath the stream of theories and conjectures there had been, however, an under current of opinion that the cause of the disease was a living organism. As early as B.C. 14, Varro had surmised that this was the case, and again in 1778, Lucretius brought forward the same theory. This opinion became more and more pronounced as methods of observation and experiment increased in precision. Dr. Salisbury, of Ohio, by direct observation concluded that the malarial germ was an unicellular alga. Following in the same track, many other observers brought forward fresh germs to be deposed in turn by germs with more pressing claims. In 1870, Dr. Oldham struck a new chord abandoning the beaten track; he states that he found it impossible under any of the usually accepted theories to account satisfactorily for many of the phenomena attending the production of malaria. Malaria as a specific poison does not exist. "I am convinced," he says "that the diseases attributed to malarious influence are caused by chill." The search by the believers in the germ was, however, actively proceeding. In 1879, the bacillus malariæ was discovered and named by Klebs and Tommasi Crudeli. Symptoms resembling those of malarial fever were said to have occurred in rabbits inoculated with the culture fluid of the bacillus, and it seemed as if the long sought for germ had at last been found. But it failed, as all others before it, to stand the test of closer investigation. Dr. Sternberg, of the U. S. Army, showed that healthy rabbits sometimes exhibited diurnal variation of temperature as marked as those on the charts. The evidence on which the claims of the bacillus malariæ were based, could not therefore be taken as conclusive. Dr. Strenberg himself, in his treatise on the subject, confessed the general ignorance of the real nature of the cause of malaria and defined it as being "an unknown poison of telluric origin."

Finally, in 1881, Laveran, of Paris, announced his discovery of a parasite which he believed to be the true malaria germ. These parasitic elements had been found by him in 180 out of 192 persons suffering from malarial poisoning, and they disappeared on the administration of quinine. Amid the conflicting claims of rival germs, but scant attention was paid to the discovery which made so great an acquisition to our knowledge, an acquisition stated to be "as important as that which revealed the true etiology and pathology of continued fevers in Europe." Sir Joseph Fayrer in his lecture on Indian Fevers, 1882, remarked that "the existence of malaria as a particulate thing has not yet been demonstrated, there are circumstances connected with its action which are difficult to reconcile with a parasitic origin." By degrees, however, the discovery of Laveran gained ground. His statements were confirmed by observers in different parts of the world. Richard in Algiers, Marchiafava and Celli in Italy, and Osler in America, endorsed the old facts and added new ones. Finally, Golgi pointed out the relation between the biological cycle of the parasite and the events of the fever cycle. There could no longer be any doubt that Laveran's parasite was the germ of malaria. It took its place as an established fact of pathology. The following description of the parasite, is taken from a lecture by Dr. Manson :—

On examining the blood of a patient suffering from malaria at the period of rigor, there can be seen floating amongst the red corpuscles, single spherical bodies which are quite isolated. These are the youngest forms of the parasite. A little later on, these bodies will have stormed the red corpuscles and appear as pale minute spots in or on the corpuscles. A few hours later, another examination will show, not the pale epicorpuscular specks, but actively moving, pale amœboid bodies, evidently within the corpuscles. These bodies push out pseudopodia into the surrounding hæmoglobin. They continue to increase in size, and after a time each one contains a few grains of a dark red pigment which is ever changing its position. Later on yet, we find similar pale bodies but now they are almost quiescent and nearly fill the corpuscles they occupy. The pigment is collected into clumps and is scarcely moving. A final examination will show the bodies as morula-like masses consisting of 10 to 20 spherules heaped around a central mass of pigment grains. These bodies may be free or surrounded by the shell of a red corpuscle. The former appear to be breaking up into individual spherules, some of which are seen floating free in the plasm. Here is evidently a cycle. The large pigmented body is the mature animal ready for sporulation. The segmented mass is the same with the spores formed and the isolated spherules are the free spores. The latter attach themselves to a corpuscle and the cycle begins afresh.

The existence of the malaria parasite being established beyond a doubt, it became necessary to discover the path by which it entered man in order to establish a complete cycle of its life history. It was certain that the malaria germ must come from without, but all attempts to find it in external nature were failures. There was but one other method of research—to follow the parasite from the human body back through its extra-corporeal life and back into man again. It was along this line that Dr. Manson carried out his inquiry in 1896 It was shown that the residence of the plasmodium in man was not accidental, but in the interest of its species. It was a true parasite, and obeying the laws of parasitism, must have acquired habits which make the continuance of its species possible, namely, the right way of entrance into the body of its host and the right way of exit from it. Certain well known facts pointed to the nature of this acquisition. The blood of a malarial patient suffering from a pernicious form of the disease, contains a form of the parasite termed the crescent body. These bodies, after the blood had been drawn for some time, were observed to take on a spherical shape and become flagellated. An interpretation was given to these facts by Dr. Manson, for the first time as follows:—" The crescent body which proceeds to flagellation is the extra-corporeal homologue of the intra-corporeal sporulating body, and the flagellum is the extra-corporeal homologue of the intra-corporeal spore. Both types of sporulating plasmodium have corresponding functions, both arise from the same source; one is the germ of the plasmodium inside the human body, the other, the germ of the plasmodium outside the human body." The fact that this process of flagellation only occurred when the blood was drawn from the containing host, led Manson to the inevitable conclusion that the plasmodium made its escape from the body through the agency of some suctorial insect, probably the musquito.

Long before Laveran's discovery of the parasite of malaria, it had been conjectured that the mosquito was in some way mixed up with the causation of the disease, and the fact that the mosquito and malaria are both paludal in habit is suggestive of such a connection. An article by King, in 1883, was the first written exposition of the mosquito-malaria theory, and Laveran in 1884, suggested that a connection between the germ and the mosquito might exist. But the idea took no definite form until Manson formulated his hypothesis that the malaria parasite was common to man and the mosquito, which it should enter, depending on circumstances, and that it could be transferred from the one to the other. There were many observers, however, who disagreed with the evolution theory regarding the flagellate body. The Italian school for the most part held that the phenomenon of flagellation was not a life process of the plasmodium, but was one of involution or degeneration. It was due to a change brought about in the dying protoplasm. The future knowledge of the intra-corporeal life history of the malaria germ depended on proving that the nature of the process of exflagellation was developmental. With this end in view, Major Ross made Manson's hypothesis the basis of further investigation.

In his preliminary experiments he showed that the transformation of crescents into flagellate bodies, could be checked or produced at will according as certain conditions were present or not. The transformation could not, therefore, be a degenerative change. By feeding mosquitoes on crescent containing blood, he then made the important observation that the great majority of crescents were rapidly transformed into flagellate bodies very soon after entering the stomach of the insect. The flagellæ subsequently broke off and became free. Pursuing his observations in India, Ross succeeded in cultivating the human parasite in the dapple-winged mosquito of the genus Anopheles. The next year, 1898, by following the development of the parasite of birds in mosquitoes, and by infecting healthy birds by means of mosquitoes which had bitten infected birds, he completely traced the cycle of the life history of the parasite. This work was confirmed by Koch and by Italian observers in 1898, and by Daniel's in 1899. McCallum had in 1897, demonstrated that certain forms of the parasite were sexual in nature and every link in the chain was complete. A little later it was shown in Italy, by actual experiment that the human being could contract the disease by the bite of an infected insect of the genus anopheles. The life history of the parasite as given by Ross is as follows:—"The youngest forms exist in the red corpuscles of the vertebrate host and on reaching maturity, become either sporocytes or gametocytes. The former are to continue the species in the blood, and proceed to sporulation. The latter are sexual forms and remain unchanged in the blood. On being sucked into the stomach of the mosquito the female gametocyte emits a body which is fertilized by another body emitted by the male form. The resulting body is termed a zygote. This now pierces the stomach wall of the mosquito and becomes affixed to its outer coat. Here it grows and becomes filled with a numerous progeny. Finally it ruptures and emits its contents, which are termed blasts. Guided by a marvellous prescience of their future destiny, the blasts work their way to the salivary glands of the mosquito, from which they are ejected through the proboscis into the blood of the next host, and the process recommences.

In 1899, the Liverpool School of Tropical Medicine, resolved to put the discovery thus made, to some practical use. Under its auspices a special expedition, of which Ross was one of the members, was sent out to the West Coast of Africa with the object of finding some better means for the prevention of malaria than those at present used.

A question which has a very important bearing on the prevention of the disease is whether anopheles is the only genus of mosquito hospitable to the human parasite. All evidence hitherto, including that of the African Expedition, points to this conclusion. To take one illustration.

It is a well known fact that large towns are unfavorable to malarial fever. This can be explained on the ground that Anopheles do not breed in tubs and vessels of water, and the stagnant puddles necessary for them are not found in well drained cities. The common mosquito on the other hand does breed in tubs of water and abounds in every city.

After a patient has once suffered from the disease which he has primarily got in some malarious region he may suffer from relapses for many years. Between the relapses the parasite still exists in his blood in small numbers, but its condition during this stage has not yet been fully determined.

Further research, will, no doubt, do much to solve various points in connection with malaria. The question of the prevention of the disease has of late become a considerable factor in imperial matters, and it has been said that Major Ross did more than anyone to add to the extent of the British Empire when he dissolved the darkness which enshrouded the action of the spirit of malaria. The British colony of Sierra Leone was chosen as the field of operations, and Ross and his associates succeeded in finding almost immediately two species of anopheles in which the human parasite would develop. It was found that anopheles breed only in pools of stagnant water; haunting the abodes of men by night, the female anopheles obtains the blood necessary for her fertilization and having inoculated her victim with malaria, returns to deposits her eggs in the stagnant water. Drainage of such pools, and destruction of larvæ, by pouring tar on the surface of the water were suggested by the expedition........and mosquito nets at night were also recommended and although anyone who has had actual experience will know that it is impossible to escape being bitten sometimes, yet the danger will be mimimized.

Before the mode of infection was known the only prophylactic measure taken was daily use of quinine.

In British Guiana, 10 to 15 grs. of the drug every morning is indispensable for the overseer of the sugar-cane plantations, if he is to escape the dread malarial disease. So well is this fact recognized that it is probable in the near future that no one will be chosen for government service in malarial regions, who cannot take large quantities of quinine.

THE MODERN BULLET, ITS EFFECTS AND THEIR TREATMENT.

BY

R. C. Cox, '02.

The paper which I shall read this evening, is a summary of facts concerning the modern bullet and its effiects which I have gathered from the reports of military surgeons and correspondents in Cuba, South Africa and the Phillipines, and of the treatment as carried out by them and advised by authorities at home.

At the very start let me impress upon you that there is a great difference in the modern bullet, as we see it in civil life, and the bullet with which the soldier makes acquaintance. So there are differences in its effects, and their treatment, but granted this, much can be learned from the experience of military surgeons on the battle field that will be of great value in civil practice.

First, to consider the bullet, and in so doing attention might be drawn to the rifle. It is somewhat extraordinary that the development of the rifle as an instrument of carrying the missile long distances, does not correspond with its destructive powers, because, although a great improvement, it does not destroy or disable as many men as the old ones, the point which in war is held to be the test for a good rifle. The bore of the rifle is small and rifled so as to give rotation to the ball in its long axis. A Mauser has a complete turn in every 22 inches, Lee Metford in every 10, and Martini Henry 8½ inches. The great object is to get a flat trajectory as this means greater accuracy in shooting, harder hitting, and increases the size of the danger zone. That is, a Martini Henry, sighted for 2000 yards, will have to rise 357 feet, so there is an immense area where a man could walk between the target and rifle. The Lee-Metford rises 194 feet. The muzzle velocity of the Lee-Metford is 2000 feet per second, of Mauser 2,300 feet. Cordite is the explosive used by the British. It is made from nitroglycerine and looks like strings of gelatine. Tommy Atkins has been known to dig it out of the cartridges and eat it as it is a mild stimulant. Smokeless powder is used, it is black and coarse resembling bits of charcoal.

"The power of the bullet to overcome resistance is directly proportional to its weight and inversely proportional to its cross section," is the rule, and it would seem that the modern bullet was made strictly according to it.

They are cylinders 1¼ inches in length, ⅓ of an inch in diameter, and weigh about 20 grams, or a little over an ounce. They consist of a lead core, hardened with 2 per cent. antimony and of a shell made of 80 per cent. copper, and 20 per cent. nickel. The tips of these bullets are rounded off even to the extent of being quite pointed. So we have a long slim heavy bullet travelling with great velocity and revolving on its long axis. These are bullets of high velocity.

But we have another class of modern bullet. These are the missles from weapons of low velocity as the Remington and Springfield rifles and the revolver. These need no description, as they are known to us all more or less, but their effects must be noted, as it is wounds from these we will meet in civil practice. So much has been said of explosive bullets that perhaps a word concerning them would be of interest. Sir Frederick Treves says, "There is no such thing, but there may be expansile bullets which are simply the ordinary rifle bullet with its nickel coat either stripped off or split, which when it strikes bends back and the soft lead is exposed. The soft nosed bullet is a soft lead bullet with no metal coat on tip."

The bullets used by sportsmen for big game are hollow nosed Mauser bullets and produce wounds of terrible character. They may have a nose of soft lead or the sheath split.

Effects.—Having glanced at the bullet, we can now proceed to the effects on the individual so unfortunate as to encounter one. A good example of the penetrating power is seen in the case of a soldier wounded in the assault on Spion Kop. A Mauser bullet passed through the centre of a Lee-Metford cartridge in his belt, and hardly bent it, and left the cordite perfectly intact, it then went through his abdomen and out through the buttock and, as usually happens, produced no symptoms. One can hardly believe that a bullet, at as long a range as this must have been, would have struck a smooth round cylinder of brass like a cartridge, and have gone straight through without exploding the cordite and then through the man, to say nothing of its producing no effects. But this case is reported by no less an authority than Sir Frederick Treves, so we can feel confident that one effect of the modern bullet is a perforatory if not a penetrating wound.

We of the class of '02 have been told that "gunshot wounds are contused lacerated, punctured wounds," damaging the tissues beyond where actually struck and in many instances failing to break the skin but producing extensive damage to the subcutaneous tissues ; and that they being dirty, carried bacteria of all kinds as well as bits of clothing into the wound, and death often resulted from comparatively slight wounds. What a different picture is presented by the modern gunshot wounds? First we notice the straight course the bullet has taken, the direction of which, of course, depends upon the position of the body at time of receipt of injury. Secondly, the small calibre of the track and slight contusion and condensation of the tissues immediately surrounding the wound. The force of the bullet seems to be mainly exerted on tissues immediately before it. Thirdly, the aperture of entry and exit are extremely small and in wounds of soft parts often differ little in appearance. If the bullet strikes at right angles the aperture of entry is circular, clean punctured out, about $\frac{1}{3}$ inch in diameter, margin just slightly depressed and contused wound of exit is more slit-like, and surrounding contusion even less marked, is about same size as entry and there are no signs of laceration. If it strikes obliquely, aperture of entry is oval, and when supported by bone as on head is of considerable size. The damage done depends on the range; at 1,500 to 2,000 yards it penetrates like a needle; at 500 yards it will smash a bone to fragments. And here is a point of interest and importance from a medico-legal standpoint in the fact that there has been no scorching and tatooing of the tissues, although the rifle has been held very close to the skin, as seen in cases of suicide and accident. So it appears that where cordite is used it is no longer possible to judge from these features at what distance from the surface of the body the muzzle of the rifle may have been at time of discharge.

Another remarkable feature is that wounds produced by the modern bullet are rarely infected, and tend to run an uneventful course to recovery. From this it is evident no bacteria are carried into the wound. So the bullet must be sterile. To what is this due? There are many answers. I will give some of them and leave you to judge as to their correctness:—

(1) Heat formed by explosive and friction of bullet against barrel of rifle during its discharge is sufficient to kill all germs. This is not generally accepted.

(2) The hard smooth surface of the bullet which bruises and lacerates tissues to slight extent and does not carry foreign substances into the wound, assisted by the velocity of the missile which in its flight is rendered sterile, and by the hard character of the kaki which is torn not punctured, so there is no piece to be carried away.

Thus theories are borne out by the fact that soft nosed bullets and those from low velocity projectiles are more commonly the cause of infected wounds.

Wounds in civil life differ from these in the greater after danger of septic involvement. Revolver cartridges are more apt than rifle cartridges to have been handled frequently, to have been carried in dirty pockets, and to have come in contact with various infectious materials. Moreover, revolver cartridges are covered with a coating of grease, which encourages an accumulation of microbes, and all the favorable factors which sterilize rifle bullets (velocity, hard coat, and rifling) are lacking. And further, bits of clothing are more liable to be carried in as woolen clothing is worn and it is soft and easily punctured.

Let us for a moment glance at a few constitutional effects, and their treatment and then proceed to wounds of special regions of the body and their treatment.

Shock.—This symptom which so commonly follows severe injuries of any kind, has been seldom seen in South Africa, and it has been noted many times that wounds of vital parts have been followed by remarkably little shock. This is probably due to the humanity of the modern bullet, bruising and lacerating the tissues to a minimum extent.

Make as warm as possible, give small doses of brandy, by mouth or rectum, or give strychnine gr. 1/80, hypodermically, in the meantime raise feet and keep blood to head.

Primary Wound Fever.—In healing of aseptic wounds there is an absence of inflammation, but a slight febrile movement, temperatare rising 3 to 4 degrees and not returning to normal for 3 to 4 days. It is thought to be due to absorption of pyogenic substances derived from the broken-down tissues and blood-clot. This is aseptic fever and calls for no treatment.

Traumatic Fever.—A fever which accompanies wounds which are not aseptic. It is due to absorption of ptomaines produced by bacteria in secretions of wounds. There is a rise of temperature 24 to 48 hours after the injury, accompanied by rapid pulse, hot dry skin, and considerable thirst. It lasts 7 to 10 days.

Examine the wound, and all infected areas should be evacuated. If edges are swollen and inflamed, clean with an antiseptic solution, bichloride or hydrogen peroxide, and drain: or reopen and apply moist dressings. If patient is in pain, administer nerve sedatives and opiates.

Secondary Wound Fever.—Takes after suppuration is established and is more marked when there is retention of pus. There is a sudden rise in temperature preceded by a chill. If not treated, fever keeps up, pulse becomes weak and rapid. There is marked prostration, so if temperature does not go down in a few days, suspect this and treat as in traumatic fever.

Simple Flesh Wounds.—Actual infliction gives rise to little pain, usually a sharp burning sensation, and is followed by remarkably little shock. External hæmorrhage is slight except where a large vessel is struck, and even here it is more common to get secondary than primary bleeding. Though external hæmorrhage is slight, internal bleeding into limbs or cavities during first hours after injury, is common. Traumatic aneurisms are frequent, and contusion of nerves gives use to more or less paralysis or neuralgia. Tendency to run an aseptic course is marked, and deep suppuration or diffuse cellulitis is rare.

During progress of healing the aperture, and with them the tracts, gradually contract. Aperture of entry is closed by a dry clot. The aperture of exit heals with a red cicatrix. The denseness of the cicatrix is often of much importance as it binds parts together (tendons, nerves, etc.), and causes impairment of motion or signs of nerve pressure. The scars left do not differ from large acne scars.

Treatment.—The first treatment of any wound now in military life, is the "first aid," and to this the remarkable results reported obtained are due; it is simply the general application of antiseptic surgery. Every soldier carries his first aid package and will not be without it. It consists simply of little packets of sterilized gauze wrapped in a piece of oiled silk. As soon as injured, he himself or a companion binds this on the wound and it gets no further contamination, as he lies on the field waiting for the surgeon, who, when he arrives, finds the wound usually aseptic, or a little infection on the clot, at aperture of exit. He simply removes clot, dresses with new dressings, and wound being put at rest heals rapidly after a few days. If wound is infected it is opened and washed out and left to drain. The proceeding is advised in all flesh wounds produced by a revolver bullet. There is some disagreement as to this being the proper treatment, Tarel argues that antiseptic washes and medicinal cleaning only weaken resistance of tissues.

Blood Vessels.—It is wonderful how the blood vessels have escaped injury in many cases where it would seem impossible. Cases are reported of bullets penetrating the neck and finding their way among the great vessels there without injuring them. From the number of such cases, it is thought the vessels are pushed aside by the rapidly moving bullet, unless struck fair, when, if the artery is large, fatal hæmorrhage ensues. If the artery is small it is cut clean off, and the ends curl up. This explains the absence of primary bleeding. Often the artery is grazed and aneurisms develop, which may rupture in a few days and cause secondary hæmorrhage and, if not treated, death. Or the bullet may cause an aneurysmal varix. Severe external hæmorrhage or symptoms of internal hæmorrhage (rapid, weak, fluttering pulse, blanched face, profuse perspiration), demand immediate operation. Cut down upon and tie the vessel at once, then elevate the feet, inject salines, and give stimulants. If the hæmorrhage is not so severe, packing the wound may be sufficient. In all cases of aneurysm or aneurysmal varix, when situated where it is possible, cut down and ligature, the collateral circulation will supply parts beyond, if not, after a few days amputation is indicated.

Bones.—Few injuries are more common or more important than these. Few exhibit more remarkable features and tax the skill and patience of surgeons more. The damage done to bones by the modern bullet depends:—

(1) Upon the thickness of its metallic sheath. The thicker it is, the less effect, as it will not split when it strikes the bone.

(2) Upon the range from which the bullet is fired. If the shaft of the bone is struck at short range, it will be badly shattered and a fragment of bone will be carried out through wound of exit. In this respect it resembles the effects of the old bullet, but there is rarely any infective material carried in, so osteomyelitis is rare. At long range, if not interfered with, the bullet is more likely to penetrate or groove than shatter the bones.

(3) Upon the bone and the portion of it struck. The illia, scapulæ, sternum and most of the cancellous ends of long bones are drilled. Shafts of long bones upper ends of humerus, and tibia, same of pubis and ischii and the patellæ are often drilled, but often fractured.

Complications of Fractures.—

(1) Impairment of mobility in neighboring joint owing to large amount of callous.

(2) Great thickening, due to fragments of bone being attached to periosteum, thus retaining vitality and throwing out callous.

(3) Nerves being involved in callous lose their function.

(4) Injuries to blood vessels by fragments of bone.

Treatment.—If bone is simply bored, treat as a simple flesh wound. When fractured, and there is little comminution as usually happens, put up in splints and treat as simple compound fractures. Bone union and soft callous are met with occasionally and should be treated by freshening edges of bone, wiring, etc. If bone is comminuted, put in apposition as well as possible, and as there is not the danger of septic inflammation and necrosis, leave all the pieces in, leave wound open, and treat aseptically, and if small amount of necrosed bone results, it can be removed later, with equal safety and much less loss of bone tissue. If marked infection occurs, wound should be laid open freely, fragments removed, and free drainage provided. This treatment has been advised in all cases of revolver wounds and in addition search for bullet, and foreign bodies and curette and pack cavity, as extreme infection often is set up by this class of wounds. Amputation is seldom called for.

Joints.—In the Civil War of the United States, 60 per cent. of gunshot wounds of knee-joint were fatal, and 51 per cent. of those who had the limb amputated, died. During the late war the percentage of deaths due to joint injuries is comparatively small. These injuries, like others, seem to run an uneventful course to recovery.

Treves writes that in a case of his "a bullet penetrated the knee-joint, entering the centre of the patella and passing out the centre of the popliteal space, and led to no trouble in the joint." Although this is the rule, these wounds are sometimes infected. If no damage is done to joint, treatment is not required beyond dressing, but, if joint is damaged, as maintenance of joint function is chief end desired, an operation must be performed, and rigid asepsis must be guaranteed. So have operation purely instrumental, keep fingers away, also sponges, so do bloodless operation, do not irrigate. If joint is infected, by multiple incisions, by free exposure of pockets, and antiseptic drainage it is possible to avoid amputation.

Wounds of Abdomen.—In penetrating and perforating wounds of the abdomen, symptoms were trifling, such as one would have after eating a green apple, and "bullet stories" are as bad as "fish stories." For example—A soldier was crawling up a ridge toward the enemy when he was struck by a bullet, which entered above the collar-bone on the neck, and came out on the inner side of the opposite thigh without producing any serious inconvenience or symptoms, except that the man being wounded thought he had better take advantage of it and get the bread and other luxuries there might be for the wounded.

In abdominal wounds the point of entry is small. "Tommy Atkins" likens it to a bug bite, and it is not difficult to overlook. Point of exit is small and apt to be more slit-like. Several cases have been shot through without any inconvenience following; in some cases bowel has been penetrated as shown by blood in the motions. Penetrating wounds of liver and kidneys, have been followed by no symptoms. One officer had a bullet pass through his liver and kidney. He had little collapse, and beyond some temporary tympanites and hæmaturia, he had no trouble of any sort. Wounds of spleen are usually followed by fatal hæmorrhage. Bladder wounds are not very frequent and are liable to be extreme and lacerated. Few cases recover, so prognosis is unfavorable. Cases in which large intestine was injured and recovery was complete, are rare.

Among the many lessons surgeons have learned during the campaign in South Africa, there are none more unexpected than those concerning the treatment of wounds of the abdomen. Before the war the rule was, "that even if the most remote chance of a wound of the gut exist, the abdomen should be opened at the first opportunity." In the early part of the campaign, a number of these cases were operated on, and it was seen that the puncture made, was so small it was difficult to recognize, especially after a few hours, and these minute openings did not leak to any extent, so it was suggested that the impact of the swiftly moving bullet had the happy effect of exhibiting peritonitis. A rapid closure of the bowel is likely to occur when patient has been long without food, a common condition among soldiers. So the majority of gunshot wounds were treated by the expectant method, and under it 60 per cent. recovered, which bears contrasting with the 90 per cent. mortality of the American Civil War. This expectant treatment is simply, dress wound, put patient at rest, nourish by rectum, and a light diet until wound is entirely closed.

Treves advises operation in these cases: if seen before seven hours after receipt of injury. If patient had short and easy transport, and if patient had an empty stomach.

Do not operate—in cases not seen until seven hours or more after receipt of wound. Those wounded after a meal. All oblique and transverse wounds above umbilicus. All cases of retained bullet. Most cases below umbilicus. All wounds of liver, spleen and kidneys. When you think colon is injured.

So according to this, the cases suitable for operation are few. Dent says,—as we are never sure of extent of the injury, an operation is only an experimental procedure, so is not justifiable and should not be resorted to unless there are evidences of effusion of blood into peritoneal cavity. This may be the better practice in military life, but surgeons at home do not think it a practical treatment of bullet wounds met with in civil practice, and I think we can refer to the treatment of Wm. McKinley as an example of the treatment adopted by civil surgeons in general. External wound is cleaned, remove omentum, wash intestines, with boracic acid solution, or carbolic (1-60), repair wound of stomach with Lembert's sutures. Close wounds of intestines, close parietal wound leaving a tube or gauze in, if any fear of infection, if not, close carefully to prevent hernia. The after treatment is same as any operation on abdomen. Rest, nourishment, and watch bowels, kidneys and temperature. Morphine is generally given as soon as patient is seen to relieve pain.

Thoracic Wounds.—Perforation of lungs seem to have healed rapidly and to give rise to few acute symptoms, probably here also contraction has immediately taken place around the narrow track of the bullet rapidly followed by permanent occlusion. After penetrating wounds of lung there may be no symptoms beyond an immediate hæmoptysis which is not repeated; in other cases there is surgical emphysema, hæmothorax, pneumothorax and an example or two of empyema. On the whole gunshot wounds of lung do well. It has been said that if a bullet from the modern rifle so much as graze the heart, it imparts to the fluid contents such rapid vibration as to hurt the organ. Treat on general surgical principles. Do not use small probe, but one with a large bulb on end, if any at all. If shock is marked, stimulate patient by external heat, strychnine, whiskey and absolute quiet. Morphine is specific in such cases by relieving pain, quieting the mind, stimulating the heart, and slowing respirations. Ordinary penetrating wounds seldom require any operative treatment, unless to remove splinters of bone. Hæmothorax as a rule subsides spontaneously. If breathing is much interfered with, aspirate pleural cavity, but do not do so unless it is absolutely necessary. Hæmoptysis is stopped by pressure or ligature. It has been advised that all endeavours to obtain asepsis should stop at the parietal wound, as irrigation of pleural cavity does harm by increasing shock and encouraging internal bleeding. If empyema follows, treat in ordinary way, remove portions of ribs, and drain, do not put drains deep as a lesson learned during the war was, that convalescence is often retarded by too long and too deep use of drainage tubes. Another point is the stuffing of gauze into any form of wound called by the Germans "cavernous." When it is removed 24 to 48 hours later, it is adherent to walls of cavity, causes pain, and is liable to start fresh bleeding and to lead to exhudation of lymph which is better for cultivation of toxic organisms than blood-clot itself. When the gauze is removed, the walls of the cavity are rigid and the wound which might have fallen together naturally and closed quickly is left gaping open. A case illustrating the treatment of these wounds in our hospitals, is seen in A ward of the M. G. H. at present. A revolver cartridge, No. 22, pierced 6th rib in nipple line on left side. When admitted to hospital two hours after, was in a very bad state. Pulse rapid and weak, and death seemed certain. Stimulants were given and operation was performed to stop internal bleeding. The ball had grazed pericardium and perforated the thin edge of lung over-lapping the heart, severing an artery which was bleeding profusely. A cautery was passed through the wound in lung and then carried out to the edge. The two tags of lung thus formed were ligatured and left to slough off. The operation was carried no further beside sponging blood from cavity. Drains were left in the wound. After operation two subcutaneous injections of saline were given $\frac{1}{2}$ pint each, and 3 of 3 ounces each, by rectum. Strychnine and camphor were given hypodermically alternating every hour. Patient was kept on fluid diet (beef juice) for 3 to 4 days, after this was given extract bone marrow in addition, to give strength. Kept under the influence of morphine for 10 days, $\frac{1}{4}$ gr. every 5 hours. Respirations were kept at 18. Morphine is always indicated in hæmorrhage, especially if there is a bad cough. Patient gained in strength and was in a fair way to recovery when empyema set in. An X-ray was taken and bullet located in 7th rib midway between angle and tubercle, and she was operated upon again for the empyema, and at the same time bullet was recovered. Since then she has gained strength and the prognosis is good.

Nerves.—Sometimes the nerves are severed, but it is more common for the symptoms to be caused by bruising and grazing of trunk or to the pressure of blood-clot. And it has been thought that even if the small bore bullet moving at high velocity did drill a perfectly clean hole through tissues, the effects are felt far from the wound, as ecchymosis often appears at some distance when it seems doubtful if extravasated blood could have extended and it is probably due to stretching of distant parts. So this may be the effect of bullets on nerves, causing symptoms without actually touching them. The symptoms are loss of sensation and motion, often with severe neuralgic pains. Nerve injuries are met with in abundance, but cases in which surgical interference is of any avail, are rare. If patient is in severe pain, it is hard to withold such chance of amelioration as may be brought about by surgical interference, but, however justifiable, results are far from encouraging. More hopeful, is when nerve is in cicatrix. If nerve is dissected out and set free there should be improvement, and it has been successful in cases where sciatic, median and ulnar were implanted. Nerve section is good practice when nerve is cut, but this condition is often diagnosed, and when cut down upon the nerve is found intact. If symptoms keep up, Dent advises cutting nerve above injury. It is thought morphine increases the amount of neurosis.

Spinal Cord.—No cases seem more hopeless, none more distressing than gunshot wounds of the cord. Degeneration is very rapid, in a day or two, deep sloughy sores have formed on the sacrum, and even where there is not the slightest pressure. Cystitis sets in early. If there is any grave lesion of cord from bullet, or fragments of bone, the wound may be considered as fatal. Sometimes when bullet does not touch cord, the hæmorrhage causes the symptoms (loss of motion and sensation below lesion, incontinence of urine and fæces. There is a zone of hyperalgia just above paralyzed area. In some cases where bullet has passed close to cord, symptoms similar to actual lesions show at once, but after a few days some sensation and a little motion is noticed. This is difficult to explain, may be due to blood-clot, and may be the same as causes these symptoms in nerve trunks, etc., may be due to vibratory effects.

Bullet wounds of spine are not necessarily fatal, and whether bullet should be removed or not will depend largely upon its location. The X-rays serve a most useful purpose in locating the bullet. If bullet is in an accessible position, it should be removed. It may, however, be in such relations to the intrathoracic viscera as to make it hazardous and unless the wound has been infected by clothing or injudicious probing, it is well in such cases not to interfere. In any surgical interference, the strictest cleanliness must of course be observed. The telephone probe may be employed to advantage in exploring for the bullet. If cord is compressed by fragments of bone or blood, or the bullet, it should be freed by operation. If bullet has passed through the body, but injured cord in its transit, it is proper to operate if symptoms do not improve in a few days, as they may be due to pressure that can be relieved.

Head Injuries.—Bullet wounds actually penetrating the skull and contents constitute some of the most remarkable cases met with. The range greatly influences the amount of injury inflicted on the bone. Also the more oblique the bullet enters, the greater the damage to the inner tissues. If entrance and exit are at right angles to axis of skull, holes are bored clean through and are scarcely seen on external inspection, but inner table of bone would be more or less broken up at aperture of entrance. Symptoms of this class of injuries vary with position of the wound, but it is wonderful the severity of the injury patients recover from. Injuries of internal table of skull is more marked in wounds caused by the modern than with the old fashioned bullet. The scalp wound heals so rapidly, the significance of the case may the more easily be overlooked. The Mauser sometimes causes external oblique fractures and splits bone badly even when it does not strike obliquely.

Another form of wounds to skull is the so-called "gutter fractures," where the bullet grazes surfaces of vault inflicting a superficial injury. No cerebral symptoms are set up, and one is liable to consider it as a slight injury, but the inner table is usually broken badly and it seldom happens that some of the sharp fragments are not driven into the dura mater, and even penetrating and wounding the brain tissue and if not removed will cause cerebral or meningeal irritation. In some of these cases operation was refused, and all went well for some time, then symptoms of sunstroke (headache, mental disturbance, rising of temperature, etc.), followed the least exposure.

A third class of head injuries, are the depressed fractures, which are produced when ball does not penetrate skull, it is really a gutter fracture, giving all signs of compression (slow pulse, paralysis of opposite side, etc.). In great majority of cases, operation is advisable, and in a large percentage imperatively called for. There is no class of cases in which surgeons can effect more. Trepanning is done in all depressed and gutter fractures, also in perforating wounds of cranium, it has been rewarded by good results. Being followed by good air and rest, there is little danger of cerebral hernia or of septic complications. Put patient at rest as soon as possible with hot water bottles around him. Give brandy to stimulate, and then inject morphine hypodermically. As soon as he is in condition give anæsthetic and remove fragments of bone, and after cleaning bring lacerated tissues together. Some use hare-lip pins for face injuries, passed as deeply as possible so as to bring deep tissues together, then unite skin by silk sutures after trimming of any loose tags, put in small drains, and dust with some aseptic powder. After operation, if stimulants are needed give brandy per rectum. Afterwards treat as any operation.

Should Bullets be Extracted?—There is a great difference of opinion on this subject. Some say it is unnecessary to remove a bullet which is not giving rise to pain or other inconvenience. Others say remove, as they are movable and are liable to reach places where their presence will cause pain and danger. Another thing is, if removed (when no contraindications) they free the mind of the wounded from all apprehension as to future complications and dangers. With aid of X-rays and telephone probe we can tell the position of bullet and make rules.

Remove the bullet.— (1) If subcutaneous. (2) If pressing on nerves. (3) If deformed. (4) If likely to interfere with union of bone. (5) If there is suppuration. Limbs should be amputated when (1) Severe wounds shattering a whole limb. (2) Infected gunshot wounds which resist treatment. (3) Extensive lacerations of muscles and shattering of bone. (4) Injuries to arteries when collateral circulation will not nourish parts beyond.

Summary.—It is safe to conclude that: (1) The modern bullet is more humane than the old one, as only one is killed to every four wounded, and 95 per cent. of wounded recover. (2) That the liability of infection is less, and the cases of empyema, erysipelas, septicæmia, tetanus, osteomyelitis, and the rest of this train are less common. (3) That conditions or surgery are different on the field than in civil practice, and especially so in abdominal cases, but as a penetrating wound of the abdomen is a rare occurrence in civil life, the information derivel from so many cases cannot fail to be of the greatest value and may modify the views at present held, but where a wound is received after a meal and by a bullet of low velocity, as the cases in civil practice, and patient can immediately be surrounded by every facility for modern aseptic proceedings, there is no doubt his chances for recovery are better when operated upon.

BIBLIOGRAPHY.

Sir Frederick Treves, Clinton Dent and many other surgeons who have contributed to the *British Medical Journal*, during the war.

E. F. Robertson's Report from the Phillipines appearing in the *Annals of Surgery, Feb., 1901.*

Reports in the *New York Medical Journal.*

Sajous Manual of Surgery.

American Text-book of Surgery.

Rose and Carter's Surgery.

THE
MONTREAL MEDICAL JOURNAL.

Vol. XXXI. APRIL, 1902. No. 4.

Original Communications.

THE MISSION OF SOCIETIES FOR THE PREVENTION OF CONSUMPTION IN THE ANTI-TUBERCULOSIS CRUSADE.*

BY

S. A. Knopf, M.D., New York.

Mr. President, Your Excellency, My Lords, Sirs, Members of the Canadian Association for the Prevention of Tuberculosis, Ladies and Gentlemen :—

The honor which you have conferred upon me by the invitation to address you to-night, while personally appreciated to the fullest extent, I must above all consider a compliment to the United States and to the medical profession of the country to which I have the honor to belong.

Between your country and the United States, between the Canadian and American medical profession, the most cordial relations have existed for years. This act of courtesy extended to an American physician, the privilege to speak at so distinguished a gathering as this, presided over by your highest official in the person of His Excellency, the Governor-General, the Earl of Minto, will bring still closer together the medical professions of these two great nations, which speak one language, and have the same aspirations, viz., the progress of humanity, the combat of disease, and the increase of human happiness.

We have gathered to-night in the interest of a work which is now attracting the attention of the whole civilized world. Throughout Europe a most active anti-tuberculosis movement is going on.

---

* Address delivered by invitation before the Canadian Association for the Prevention of Tuberculosis, at its annual meeting, April 18th, 1902, at Ottawa, at which His Excellency, the Governor-General, the Earl of Minto, presided.

305317 D
29.10.34

Societies for the prevention of tuberculosis or for the erection of sanatoria exist in nearly all European countries, and these societies are sanctioned, helped and patronized by governments, kings and princes. England has its "National Association for the Prevention of Consumption and other Forms of Tuberculosis," with His Majesty, King Edward VII., as patron, and His Royal Highness the Prince of Wales, as President. There are 34 Vice-presidents, among whom we find the names of the Duke of Bedford, the Marquis of Londonderry, the Marquis of Ripon, the Marquis of Salisbury, the Marquis of Zetland, the Earl of Derby, the Earl Spencer, Lord Lister ; the Presidents of the Royal Colleges of Physicians and Surgeons of England, Ireland, London and Edinburgh ; the Director-Generals of the Medical Service of the Army and Navy ; the Presidents of the Royal Agriculture and Veterinary Societies ; Sir Hermann Weber, and many other equally illustrious names. The members of the Council are presided over by Sir William Broadbent and the Right Hon. Sir Herbert Maxwell. Alfred de Rothschild and Malcolm Morris are the Treasurers, and Alfred Hillier is Secretary. This British National Association for the Prevention of Consumption, counted already at the end of last year 13 branches, namely the Bournemouth branch, the Bradford branch, the Cumberland branch, the Devon and Cornwall branch, the Dublin branch, the Society for the Prevention and Cure of Consumption in the County of Durham, the Glasgow and District branch, the Gloucestershire, Somerset, and Wilts branch, the Leicester and Leicestershire branch, the Liverpool and District branch, the Newcastle-upon-Tyne and Northumberland branch, the Northampton Town and County branch, the Nottinghamshire Association for the Prevention of Consumption and Other Forms of Tuberculosis, the Southampton branch, the South Wales and Monmouthshire branch, the Ulster branch, the Winchester and District branch, the Wrexham and District branch and the York branch.

In Germany the work of societies for the prevention of tuberculosis and sanatorium associations started under the patronage of Her Majesty the Empress Augusta Victoria, who, likewise, became patroness of the congress held in Berlin in 1897, under that appropriate name "Kongress zur Bekämpfung du Tuberkulose als Volkskrankheit" (Congress for the Combat of Tuberculosis as a Disease of the Masses). "The German Central Committee for the Erection of Sanatoria for Consumptives," which has done such good work during the past few years, remains under the patronage of Her Majesty the Empress, and has for its Honorary President His Highness the Prince Hohenlohe-Schillingsfurst, and for its President Dr. Count von Posadowsky-

Wehner, Secretary of the Interior, and among its Vice-presidents such men as Count Lerchenfeld, von dem Knesebeck, von Mendelssohn-Bartholdy, the Duke of Ratibor, von Ballhausen, Professors Fränkel, Gerhardt, and von Leyden. The Council is likewise composed of 48 men belonging to the best class of society, the aristocracy of science, birth and finance. Dr. Gotthold Pannwitz, Chief Staff Surgeon of the Army, is the able Secretary of this committee with offices in one of the government buildings on the Wilhelmplatz in Berlin.

Nearly every German city of importance has its sanatorium association. They, in common with the "Invalidity Insurance Companies," have accomplished a vast amount of good in procuring sanatorium facilities for thousands of consumptive poor of the German empire.

In France, where the government has taken a most active part in the anti-tuberculosis work, private enterprise has created a journal called "La Lutte Antituberculeuse." As patrons of this periodical figure the names of Brouardel, Letulle, Arloing, Landouzi, Monot, Calomet, and others of equal prominence. This journal is the official organ of 25 antituberculosis movements, under a variety of names, such as "Popular Sanatorium Work," "French League Against Tuberculosis," "Agricultural Colony for Poor Convalescent Consumptives," "Maritime Sanatorium Association," "Maritime Sanatorium for Scrofulous Children," "Society for the Prevention of Tuberculosis and the Gratuitous Placement of Poor Consumptives in Sanatoria," "Work for Tuberculous Children," etc., etc. Five of those associations are located in Paris, two in Bordeaux, and two in Lille, the rest throughout the Departments of France.

The very latest news which came to us from France this week speaks of a federation of 76 various anti-tuberculosis institutions in that country, which sent delegates to an assembly convoked at Paris, March 16th, for the purpose of uniting them all into a national federation. The success of that plan surpassed all anticipations, and the result of the deliberation was the formation of a Central Bureau and Council for mutual aid. It was furthermore proposed to establish a permanent exposition for everything needful for the campaign against tuberculosis.

Japan, Russia, Austria, Italy, Portugal, Spain, Holland, Denmark, Sweden and Norway have done similar work, though not on such an extensive scale. In some of the American Latin republics there, too, has been an awakening, and to judge from the "Revista de la Tuberculosis," "Organo de la Liga Argentina Contra la Tuberculosis" they are doing excellent work in the Argentine Republic, Chili, Brazil, Uruguai, Paraguai, Bolivia, Ecuador, Peru, Mexico, etc. In January, 1901, in Santiago-de-Chili, there was formed a permanent national commission for the prevention of tuberculosis in Latin America ("Comision Internacional Permanente par la Profilaxia de la Tuberculosis en la America Latina").

In Cuba anti-tuberculosis work is most active. It is carried on partly by the United States Military Chief Sanitary Officer, and partly by the Tuberculosis Society of Cuba under the presidency of Dr. Emilio Martinez.

The latest international development in the combat of tuberculosis has been the formation of an International Central Bureau for the Prevention of Tuberculosis, with its seat in Berlin. Its objects are, I, to collect all news relating to the combat of tuberculosis in various countries ; II, to collect the literature on the subject ; III, to reply to questions relating to the anti-tuberculosis movement; IV, to petition the proper authorities to further the cause ; V, to receive and make suggestions relative to the international combat of tuberculosis, especially as regards investigations, the publication of popular essays, and arranging lectures and meetings; VI, to publish a periodical to be sent free of charge to all members, containing the reports of the work done by the International Central Commission, and discussing other subjects of interest to the cause.

Every country is represented by at least two members, and countries with more than ten million inhabitants are entitled to one more representative for every five million people; but the total number of members for a single country must not exceed five.

Here in North America we have, perhaps, not done quite as good work as our brethren in Europe. In Canada, however, though your country has a smaller population that the United States, greater strides in the anti-tuberculosis work have been made than in the latter country. You have already a Canadian Association for the Prevention of Tuberculosis while we have but a few small local societies striving to do the same work you are doing. They are the Pennsylvania, the Colorado, the Ohio, the Maine, the Minnesota, and the Illinois Societies for the Prevention of Tuberculosis. Besides these State Associations there exists in Baltimore a Lænnec Society for the Study and Prevention of Tuberculosis; a similar one in St. Louis composed of the alumni of the City Hospital; a Cleveland City, a Buffalo City, and Erie County (N.Y.), and in New Hampshire the Suncook Association for the Prevention of Tuberculosis. There exists as yet no American or United States society for the prevention of tuberculosis. It grieves me to make this statement, and I do it not without a sense of humiliation. But I am full of hope, and I trust that the example which you, our good neighbors, are setting us to-day will not be without fruits. I devoutly hope that some day in the near future we may even enjoy a union meeting of the present Canadian and the future United States societies for the prevention of tuberculosis. I look forward to the time when, by a combined effort, we may be able to combat tuberculosis as a disease of the masses throughout this continent.

In this thought let us find our inspiration to discuss now as intelligently as we may be able to do the subject we have chosen. With your permission I desire to speak on "The Mission of Societies for the Prevention of Consumption in the Anti-tuberculosis Crusade."

At no epoch in Phthisiology, or for that matter in the history of medicine in general, has this singular disease, called consumption, or pulmonary tuberculosis, been so much written and talked about as at the present time. I have endeavoured to give you a birdseye view of the various anti-tuberculosis movements in foreign countries and of those of our own continent. You know of, and have yourselves experienced the widespread interest which is now now taken by medical and laymen all over the civilized world in this tuberculosis problem. If I should, however, be asked what is the cause of this strong awakening to the importance of a disease, the contagiousness of which was known to Isocrates, a contemporary of Hippocrates (460-377 B. C.) and the curability of which was demonstrated and described by the Arabian physicians as early as the 10th and 11th centuries, I would be at a loss to answer in one sentence. There have been mighty forces in operation to bring about this awakening which came almost simultaneously with the increase of our knowledge concerning the etiology of tuberculosis. Our greatest gratitude for the increase of knowledge in this respect we doubtlessly owe to that trinity of masterminds, Pasteur, Koch, and Lister, those three stars in the firmament of bacteriological science who represent at the same time the three foremost nations of the world. The first, the immortal Pasteur, has taught us that an infectious disease cannot arise without the presence of an infectious germ; Koch has shown us the infectious germ of the disease in which we are particularly interested, and Lister has demonstrated to us the value of cleanliness and antisepsis in the combat of infectious diseases.

It would take me too far to enumerate here the many illustrious pupils and co-workers of these three men. Wherever medicine is taught you find the pupils of those men as teachers. They have helped you and me to understand the true nature of tuberculosis.

For the modern methods of curing tuberculosis through outdoor life, proper hygiene and good food, we are primarily indebted to the English people. It may not be generally known that even the earliest efforts in sanatorium treatment were inaugurated by an Englishman in the person of Dr. George Bodington, of Sutton Coldfield, Warwickshire, England ; and as a veritable pioneer in aërotherapy we must not forget that princess among nurses who helped to cure the English physician Bennett from consumption, the great and good Florence Nightingale. Brehmer and Dettweiler, of Germany, were the pioneers of the sanatorium treatment of consumption as it is now almost universally practised, and as American pioneers of modern phthisio-therapy we must not fail to mention our distinguished colleagues, Dr. E. L. Trudeau of the Adirondack Cottage Sanatorium, and Dr. Vincent Y. Bowditch, of Boston.

To summarize our present knowledge and to state the basis on which our societies for the prevention of tuberculosis should work, we might say we now know that tuberculosis, especially in its pulmonary form, is an infectious, communicable, preventable, and in many instances absolutely curable disease. Furthermore, that it can be cured in nearly all climates where the extremes of temperature are not too pronounced, and where the air is relatively pure and fresh. In other words, it is not always necessary for a consumptive patient to travel long distances and seek special climatic conditions, but that in most instances he has a chance of getting well even in his home climate.

Before I proceed, may I be allowed to digress just for one moment to make it clear why I call tuberculosis, and especially pulmonary tuberculosis, a communicable, and not a contagious disease, still less a dangerous contagious disease. There is enough difference in the meaning of the words to justify an explanation. It is my firm conviction based on the experiences and the experiments of our greatest European and American scientists, such as Koch, Straus, Grancher, Prudden, Biggs, and others, and on a somewhat extensive experience of my own, that tuberculosis is not a dangerous contagious disease, but only a communicable one. To be in contact with a tuberculous individual who takes care of his expectoration or other secretions which may contain the bacilli, is not dangerous. In sanatoria for consumptives, where the precautions concerning the sputum are most strictly adhered to, one is perhaps safer from contracting tuberculosis than anywhere else. The great danger from infection lies in the indiscriminate deposit of sputum containing the bacilli, which when dry and pulverized, may be inhaled by susceptible individuals and then cause the disease to be developed. The communication of the germ of the disease is, however, less obscure to us in its process and far more easily guarded against, than the contagion arising from such maladies as diphtheria, scarlet fever, or smallpox. What has just been said concerning the absolute security from infection in a well kept sanatorium can not very well be said of a smallpox hospital, no matter how well directed the hygienic precautions. Against the danger from contracting smallpox we have thus far no other means than preventive vaccination, and in case of an outbreak of the disease the most rigid isolation. It is entirely different with tuberculosis. The simple contact of a smallpox patient may suffice to convey the disease. This is never possible with a consumptive, with whom, even should he be careless or unclean, a prolonged contact is necessary to transmit the disease. Herein lies the difference between communicable and contagious.

It seems to me essential that those of us who labor not only with tuberculosis patients, but also with their friends and relatives, and a large portion of the community, whose sympathy we desire to enlist in our cause, should know the true status of a consumptive. Whether we work under the name of society for the prevention of tuberculosis, or sanatorium association, or an anti-tuberculosis movement of any kind, we must never, never be considered as an anti-consumptives society. The consumptive must know that every member of an anti-tuberculosis society is his friend, that we labor for him and not against him, that we try to lessen his burdens, and that we are the last to make him feel as if he were an outcast from society. To do the work in this spirit will be the first and most essential duty in the mission which a society for the prevention of tuberculosis should fulfill.

Infused then with this spirit of deepest sympathy for our fellow creature who may be afflicted with consumption, what can we do for him to protect him from reinfection? What can we do for him that he may not transmit the disease? What can we do for the community at large to protect it against the invasion of the tubercle bacillus and the subsequent inroads of the "great white plague?" What can we do to better the condition of the consumptive poor and those of moderate means?

The first question, what can such societies as yours do to protect the consumptive from reinfecting himself or infecting others, must be answered by the single word "education." The Pennsylvania Society for the Prevention of Tuberculosis, of which I have had the honor to be Vice-president for a number of years, has issued a series of very interesting and instructive pamphlets with this end in view. Permit me to give here the titles of a few of them: "How persons suffering from tuberculosis can avoid giving the disease to others." "How to avoid contracting consumption." "How hotel keepers can aid in preventing the spread of tuberculosis." "How storekeepers and manufacturers can help to prevent the spread of tuberculosis." "Predisposing causes of tuberculosis; how to avoid or overcome them." To complete the education of the public this series of pamphlets might be increased, and I would suggest the following themes: "How can children be protected from scrofula and other forms of tuberculous diseases?" "What can the farmer and dairyman do to diminish the frequency of tuberculosis among animals, and thus indirectly stop the propagation of the disease among men?"

I do not intend to suggest to you any means of combating tuberculosis in cattle, nor measures to prevent the sale of tuberculous products, such as milk and meat. This is the province of the boards of health with whose duties we should not interfere. Societies for the prevention of tuberculosis should, on the contrary, work in greatest harmony with the officials of the health departments. By the combined workings of these two bodies a great deal of good can be accomplished. You should not only seek to give your pamphlets the largest possible circulation, particularly in the densely crowded tenement districts, but they should be gratuitously placed in the hands of all health officers so that they may distribute them to families wherever they think they are most needed. You should also place these pamphlets gratuitously at the disposal of physicians.

But the educational work of societies for the prevention of tuberculosis should not be limited to the mere distribution of pamphlets. There should be frequent popular lectures and reunions where verbal lessons are taught and discussed. These lectures and practical talks should be reported to the daily press. I do not believe there is a single newspaper in your country or in mine, or for that matter in any part of the civilized world, which would not always be glad to print the report of a meeting of an anti-tuberculosis society. The daily press has already done much good in spreading the knowledge which consumptives and those living with them should possess. Unfortunately, the public press serves also at times for the advertising of the many "absolutely sure consumption cures," which are from time to time put on the market by unscrupulous quacks. I am nevertheless sanguine enough to hope that in time the better class of newspapers will, in the interest of the community at large, no longer extend the hospitality of their columns to such dangerous advertising matter, especially when it is protested against by such societies as yours. How many poor consumptives have lost their last little reserve fund by giving everything they had for a dozen bottles of that "sure and quick cure," only those who come much in contact with them know. How unscrupulous some of these charlatans are in their method of procuring certificates of cure is something which can hardly be believed. Let me tell you only of one instance: A poor woman in the last stages of consumption came to me seeking advice. When asked for the name of her former medical attendant, she confessed that she had been treated for a number of weeks by a quack concern, and now, her means being exhausted, she was made to understand that they would not continue to treat her unless she would give them a certified testimonial that she had been thoroughly cured of her disease which had been pronounced by prominent physicians as an advanced case of consumption. This poor sufferer had not derived any benefit whatsoever from the treatment, and as a result her conscience would not permit her to become a partner to such a fraudulent procedure.

To break the nefarious trade of the man who deals in sure and infalible consumption remedies, to stop the practice of the men and women who claim to be able to diagnose and treat consumption by letter, the Christian scientists and faith curists who ridicule preventive measures and the laws of cleanliness and hygiene—which are the laws of God,—but who, as a token of faith, demand their fees in advance, we have but one weapon, and that again is education. I would suggest that every pamphlet which may be issued by a society for the prevention of tuberculosis, every lecture which may be printed for the cause, every newspaper report which is sent forth, should include a declaration, which should read about as follows:—

Consumption is a preventable and curable disease. The sooner the patient puts himself under the care of a competent physician the greater are his chances for recovery. The well trained physician is the most competent person to guide the patient in the means to prevent reinfection of himself or the infection of his fellowmen. Consumption, or pulmonary tuberculosis, is not cured, and never has been been cured, by quacks, patent medicines, or any other secret remedies. The most modern and most successful methods of treating consumption consist solely and exclusively in the scientific and judicious use of fresh air, sunshine, water, abundant and good food, and the help of certain medicinal substances when the just mentioned hygienic and dietetic means do not suffice in themselves to combat the disease.

The thorough and constant supervision of the pulmonary invalid, the immediate intervention when new symptoms manifest themselves or old ones become aggravated, or do not disappear rapidly enough, the prescription of proper food and drink, can only be had at the hands of the thoroughly trained physician.

With educating our consumptive friend, those living with him and the public at large, as to the methods of prevention and means of cure, the mission of a society for the prevention of tuberculosis by no means ceases. Our work has only commenced. We must now solve the question which I have asked above: What can we do to better the condition of the consumptive poor and those of moderate means?

The well-to-do patient can easily be advised to better his unhygienic environments; with the poor it will be far more difficult. When our work brings us into the presence of a consumptive wage earner, living in a tenement house in a few badly ventilated and badly lighted rooms, with the earnings of better days gone, with scanty food and scanty raiment, we wish we could do not one thing but many things. First of all we would wish we could take this poor sufferer to a sanatorium where he would have the best chance of cure and where the possibility of his reinfecting himself and infecting his wife and children would be removed. We would then wish to examine all the members of the family to find out if there are any who have already contracted the disease, and, if so, take them too in the earliest possible stage to a sanatorium for complete recovery. The next thing we would wish to do is to advise a thorough disinfection of the rooms, bedding, and garments of all the members of the family. Lastly we would wish to be able to provide for the family in want, deprived of their wage earner, good food, and, if possible, a more healthful apartment, so that all the predisposing factors of tuberculosis, which are bad ventilation, poverty, want and malnutrition, as well as the existing foci of infection, shall be eliminated for once and all.

What a vast amount of work there is to do! What a great mission a society for the prevention of consumption has to fulfill! Where will we find shelter for the consumptive poor, who, not infrequently, owing to an unjustified and cruel phthisiophobia (exaggerated fear of the presence of consumptives) are little welcome anywhere. The sanatorium must be to the poor consumptive not only a place of cure but also a haven of rest. There are not enough sanatorium and hospital facilities for the consumptive poor either in your country or in mine. Thousands of consumptives are allowed to die annually, not because their disease could not be cured, but for the simple reason that there is no place in which to cure them. One of the greatest missions of a society for the prevention of tuberculosis is therefore the propaganda for the erection of sanatoria for the consumptive poor, and not only for the absolutely poor but also for those of moderate means, not only for consumptive adults, but also for tuberculous and scrofulous children. If any community would have the courage, conviction, and means to erect a number of sanatoria and special hospitals for all the tuberculous invalids, which, owing to want of means can not be properly treated at home, there would not only be a great sanitary, a great moral, but even a great financial gain at the end of a very few years. Those of my hearers who have visited any of the European, American, or one of your beautiful sanatoria in Canada, will bear me out when I say that there is no better school of hygiene than the well conducted sanatorium for consumptives.

The inmate of such an institution, after a few weeks sojourn, has been trained in hygiene and cleanliness and regularity of life. The beneficent influence of sanatorium education is so true that it has been even demonstrated that in the villages of Goerbersdorf and Falkenstein, where five of the most important and flourishing German sanatoria are situated, the mortality from tuberculosis among the villagers has actually been decreased by one-third from what it was before the establishment of these institutions. The villagers voluntarily followed the hygienic regulations, which are obligatory for sanatorium inmates. This shows how wrong our phthisiophobic friends are when they object to the establishment of a well conducted sanatorium for fear of contagion to the neighborhood.

If a community will erect a sanatorium for its indigent consumptives, this institution will prove to be a hygienic educator to all the inhabitants. The patient returning home, whether cured or only improved, will have become a practicing expert in the prevention of tuberculosis. Should he have been fond of intoxicating liquors the enforced abstinence in the sanatorium, the good food, the regular life, and other ennobling influences which the sanatorium offers, will most likely have made a better man of him, morally as well as physically.

Let me, lastly, demonstrate to you that the communities which you will seek to interest in the establishment of sanatoria will gain financially by placing their consumptive poor in time in such an institution. I have advanced this argument before. I am not very familiar with the condition of your own large cities in this respect, so if you will permit me I will take as an example my own state, New York, which has the largest population of any in the United States, and quote in part what I have said on this subject in my article on Tuberculosis in the Twentieth Century Practice of Medicine, vol. XX., 1900. It is estimated that there are in New York State about 50,000 tuberculous invalids. Of these probably one-fifth belong to that class of patients which sooner or later become a burden to the community. These 10,000 consumptives, absolutely poor, will sooner or later have to be taken care of by the public general hospitals. While they may not stay in one hospital for twelve months continually, they will certainly occupy a bed in one of the public institutions for that length of time before they die. According to the last annual announcement of the public charity hospitals of New York, the average cost per patient per day in the general hospitals was $1.16. Thus the cost to the commonwealth will be $4,234,000 per year for caring for the 10,000 consumptives.

What would be the expense if they were taken care of in a sanatorium? Experience in this country and abroad has demonstrated that the maintenance of incipient cases in well conducted sanatoria can well be carried out for one dollar per day. If these 10,000 would be sent to a sanatorium in time, at least 6,000 of them would be lastingly cured after a maximum sojourn of 250 days, at an average expense of $250 per capita. Thus for $1,500,000, 6,000 individuals would be made again breadwinners and useful citizens. If the remaining 4,000 invalids were kept in the sanatorium one year before they died, it would cost $1,460,000. Thus, taking away from the tenement districts 10,000 consumptives, curing more than half of them, and caring for the other half, and destroying 10,000 foci of infection, will cost $2,960,000. Not taking care of them in the earlier stages of their disease they will probably all die, since this 10,000 represents the absolutely poor who now live under the most unhygienic conditions; but before dying they will have cost the community $4,234,000.

Another important factor in the combat of tuberculosis, particularly among the poor of a large city, it seems to me, is the establishment of special tuberculosis dispensaries. All pulmonary invalids who for one reason or another cannot find sanatorium accommodation, former sanatorium patients who are convalescent but still need medical guidance, or all people afflicted but slightly with tuberculosis and able or obliged to pursue light outdoor occupations, could find in such a tuberculosis dispensary an admirable temporary substitute for the sanatorium. In France and Germany such special dispensaries, aided by diet kitchens, which are essential in order to carry on the dietetic treatment with the unfortunate consumptive poor, have done already a vast amount of good. In most of the cities there are as yet, and will be for some time to come, insufficient sanatorium facilities, and therefore such special dispensaries seem to me an urgent necessity.

In our care for the consumptive adult, however, let us not forget the tuberculous child. He will be the man of to-morrow, and the more healthy and strong men and women we can make of these little sufferers the fewer consumptive adults we will have to take care of. The results which are obtained in seaside sanatoria for the treatment of tuberculous and scrofulous children in some of the European countries are simply marvellous. If tuberculosis is curable in the adult, it is still more so in the child. Some French institutions report as many as 75 per cent. of absolute cures of these little ones. It is strange to say that we on this continent have so few institutions of this kind. France alone has, according to "La tuberculose infantile," of December, 1901, along its sea coasts no less than 24 sanatoria for tuberculous and scrofulous children, offering accommodation to 3,923 patients. All these sanatoria are provided with educational facilities, so that the children's intellectual development does not suffer. To make propaganda for such school sanatoria for tuberculous and scrofulous children is another of the duties of a society for the prevention of tuberculosis.

Before concluding let me beseech you not to rest here with your labors. After you will have removed multiple centres of infection from tuberculosis, after having erected sanatoria for tuberculous adults and children, there will still remain, if not the most important, at least equally important, factors of predisposition to tuberculosis which we find in the badly housed, in the badly clothed, in the underfed and overworked individual. A society for the prevention of consumption must make it one of its duties to work for the better housing of the poor. Let it be known to employer and employee, to every landlord and tenant, to rich and poor, but particularly let it be known to the dwellers in the crowded tenement districts that it is as dangerous to breathe foul, vitiated air as it is to drink foul and infected water. Sweatshop work and unsanitary factories and workshops should not be tolerated in this enlightened century. The eight-hour law and the prohibition of child labor should be enforced everywhere if the underlying factors of the propagation of tuberculosis shall be removed.

All children at school should have more outdoor instruction and more physical culture than they have now. It is wrong, nay, it is even a crime to push the intellectual culture of children to the detriment of their physical growth and development. Children in our public schools should be taught the value of sensible dress and be equipped with the knowledge of elementary hygiene. Housekeeping and good, plain cooking should be compulsory in the curriculum of all girls' schools. The young woman will then, whoever she may marry, know how to make even a small and modest home a happy and cheerful place, and the husband, returning from his day's labor, will not seek the club or the saloon. It is so often the dark, dreary, and untidy tenement, and the poor food, badly cooked by the wife who does not know how to do better, which drive the husband to the saloon. Give to the laboring man a clean, cheerful home, be it ever so modest, and an intelligent housewife who can prepare good and appetizing meals, and the rum-shop will have less temptation for him.

Alcoholism is a strong predisposing factor to tuberculosis, and while the moderate use of feeble alcoholic drinks, such as light beers, may be considered as harmless to adults when taken with their meals, alcohol should never be given to children in even the smallest quantities. In families in which there is a fear of hereditary transmission of the desire for strong drink, even the mildest alcoholic drinks should be absolutely avoided. It would also be best if all people so predisposed, or who may have acquired only the occasional desire for drink, should never smoke, for experience has taught that attacks of dipsomania (periodical sprees) are often caused by an excessive use of tobacco. The young man starting out in life should take with him the moral training which will enable him to be a gentleman, and be considered a polite gentleman, though he absolutely refuses ever to enter a liquor saloon in order to treat or be treated to drink. It is this treating habit—alas ! so prevalent in our American society—which has ruined many a young man and made him a moral and physical wreck. The creation of tea and coffee houses, where warm, non-alcoholic drinks, including bouillon, are sold in winter and cool ones in summer, is to be encouraged. It would be of additional advantage if some of these houses could also offer healthful amusements for old and young.

All such knowledge you should disseminate whenever and wherever you can. Yet important as this dissemination of knowledge, and the propaganda of sanatoria are, there still remains some work which you are called upon to do if you want to fulfill the whole mission of a society for the prevention of consumption in the anti-tuberculosis crusade. You will have to appeal to the great philanthropists of your country for material help. Without their aid you, the municipalities and the health boards will be handicapped in your fight against this common foe, for no community has public funds enough to cope alone with the tuberculosis problem. Plead with those noble souls who have given and are giving so much for educational institutions to examine the work you are doing. We all are profoundly grateful for what has been done in recent years by philanthropists in the line of creating and endowing educational institutions. Yet, it seems to me, that there is now at least in this northern part of America a plethora of colleges, universities and libraries, and I know that there is in nearly all of our large Canadian and American cities a penury of good model tenement-houses, where the average wage-earner could enjoy a cheery, pleasant home without paying an exorbitant rent. There is a penury of public baths which, for a moderate price, should be at the disposal of the people every day, winter and summer, and for some hours in the evening. There is a penury of decently kept places of amusements, open all the year, where the laborer and his family may spend a pleasant Sunday afternoon, and partake of non-alcoholic drinks. There is a penury of children's playgrounds and small parks. There is a penury of hospital and sanatorium facilities for thousands of poor consumptives, who would be cured if only taken care of in time. Call the attention of your statesmen and philanthropists to this condition of affairs and I am sure they will gladly co-operate with you in your endeavour to solve this tuberculosis problem, the most interesting and important of medical and social problems of our times.

The help of your statesmen and philanthropists is needed also in another direction. You will recall that I spoke to you a few moments ago of the many things we would like to do for the family in the tenement homes, of which several members were afflicted with tuberculosis. There is one more thing we would wish to do of which I have not yet spoken, and that is to induce that family to leave the crowded city and move to a smaller town or village, if it is at all possible for them to do so. There they would find larger and more commodious quarters for less money. Urge them to take up agricultural pursuits, or to seek at least such occupations as will demand outdoor life. I know all this will not be easy, but I see in connection with this problem a large field of true statesmanship and practical philanthropy. By making farming more profitable the statesman will stop the overgrowing tendency of emigration from village to city. By creating and endowing institutions for healthful amusement in country districts, and thus making life more attractive there, the philanthropist will confer a lasting benefit upon old and young, and increase the wealth, health and happiness of a large portion of the population.

Every member of a society for the prevention of consumption must consider himself a worker and a missionary in a field as important as ever lay before anyone who went out to preach the gospel to the heathen. The field of work which lies open individually as well as collectively to members of societies for the prevention of tuberculosis is large. It is important, I may say it is inspiring, for there is no work more gratifying than to help the prevention of a disease which is preventable, to help to cure a disease which is curable, and to add indirectly through such work to the prosperity, health and happiness of our fellow citizens and increase the well being of humanity at large.

REPORT ON THE CASES OF TYPHOID FEVER TREATED IN THE ROYAL VICTORIA HOSPITAL DURING THE YEAR 1901.

BY

A. C. McAULEY, M.D., Senior Resident Physician.

During the year 1901 there were treated in the wards of this hospital 168 cases of typhoid fever, 94 males and 74 females. Of these, 160 were treated to a conclusion and 8 are still under treatment. The latter are not included in the present report. The mortality was not so high this year as last. There were in all 9 deaths, that is, 5.6 per cent. Death resulted in three cases from perforation ; in three cases, from hæmorrhage ; in one, from profound intoxication and slight hæmorrhage ; in one, from profound intoxication, slight hæmorrhage and erysipelas ; and in one case, from accident during delirium.

During the year there were five cases of perforation, two of whom were operated upon successfully.

The following data are the points of interest :—

Age :—The average age of all the patients was 23.5 years, the youngest being 2½ years old and the oldest 56 years.

Arranged in decades they are as follow :—

Up to 10 years of age	10
Between 10 and 20 years	44
Between 20 and 30 years	79
Between 30 and 40 years	20
Between 40 and 50 years	5
Between 50 and 60 years	2

Season :—The largest number of cases were admitted during the months of August and September, there being 27 admissions each of these months, the smallest during March.

July, August and September	45 per cent.
October, November and December	23.1 per cent.
April, May and June	21.9 per cent.
January, February and March	10 per cent.

Duration of Cases:—The average day of disease on admission was 9.7.

The average number of days in the hospital was 40 days.

The average duration of the fever was 22.5 days.

The longest period of fever was 58 days.

The shortest period of fever while in the hospital was three days, the patient having been admitted on the fifth day of the disease with a temperature of 102.4° F.

Infection :—One patient admitted had been nursing five of her children through typhoid fever.

In two instances, four members of the family were suffering from typhoid.

In one instance, three cases were admitted from one house.

In seven instances, two members of the family had typhoid.

Five patients admitted had recently been at the same summer resort.

Symptoms :—*Onset and Course* :—In 97 per cent. of the cases the onset was gradual, the most frequent symptoms being anorexia, general malaise, frontal headache, chillness and pain in the back and limbs.

In one case the onset was very sudden and patient had severe diarrhœa and cramp-like pain in the abdomen. In another case of sudden onset the headache and weakness were extreme and came on abruptly.

In two cases the onset was chill and rigor. In one case the onset was severe headache and pain in the side.

Diarrhœa was present at some stage of the disease in 51 per cent. of the cases.

Constipation was present at some stage of the disease in 79 per cent. of the cases.

Vomiting was present in 30 per cent. of the cases.

Delirium was present during onset or course in 16.8 per cent. of the cases. In all except two cases it was of a low muttering character.

Epistaxis occurred during the onset in 13.7 per cent. of the cases.

Eruption :—The characteristic "rose spots" were present in 82.3 per cent. of the cases. The average date of appearance of the 'rose spots' was on the tenth day of the disease. The earliest appearance of the rash was on the fourth day of the disease, and the latest date at which it made its appearance was on the 33rd day of the disease.

Spleen :—The spleen was palpable in 70.8 per cent. of the cases. The third day was the earliest on which the spleen became palpable. In one case is was not palpable until the 33rd day of the disease. On the average the spleen became palpable on the tenth day of the disease. On the average the spleen was palpable for 17.3 days. In two cases the spleen was palpable for only two days. In one case the patient was in the hospital for 88 days and the spleen was palpable throughout. In another case the spleen was palpable for 59 days, but was not palpable when the patient was discharged.

Relapse :—A definite relapse occurred in 9.3 per cent. of the cases.

The longest duration of the fever of the relapse was 18 days, and the shortest duration of the fever of relapse was 5 days. The average duration of the fever of relapse was 11.2 days.

The average date of disease on which the relapse occurred was the 31st day.

In two cases there was a previous history of typhoid fever.

Fever :—The highest temperature recorded was 105.8° F., which occurred in two cases. In one case the maximum temperature was 100.8.° The temperature reached 105° or over in 9.3 per cent. of the cases.

Complications :—Jaundice and cholecystitis occurred in three cases.

Perforation occurred in five cases all of whom were operated upon, and two made good recoveries. One of the fatal cases developed a second perforation.

At the beginning of the year 1901 there was still in the ward a case which simulated perforation. He was operated upon but no perforation was present. An account of this case was given in the last year's report. He made a good recovery.

Intestinal hæmorrhage occurred in 16 cases. In three cases hæmorrhage was the direct cause of death, and one of these cases had hæmorrhages also into the rectus abdominalis and psoas muscles. In two other fatal cases intestinal hæmorrhage was present but not in sufficient amount to be considered a very important factor in causing the fatal issue.

Circulatory System :—In 40 cases there was a systolic murmur audible at the apex during the course of the disease. In two cases there was a presystolic murmur at apex. One case had a diastolic murmur at the aortic cartilage. This same patient also had a systolic murmur at the aortic cartilage and a presystolic murmur at the apex. He had albuminuria and casts and made a complete though slow recovery from his typhoid.

There were three cases of femoral and two cases of popliteal phlebitis.

Respiratory System :—Acute bronchitis was present in 10.6 per cent. of the cases.

Pleurisy with effusion occurred in six cases, one of which was a double pleurisy.

Lobar pneumonia was present in five cases, and broncho-pneumonia in one case.

Tuberculosis was present in one case.

Other Systems :—Febrile albuminuria was present in 42.7 per cent. of the cases.

Acute nephritis developed in five cases.

Hæmaturia was present in one case.

Retention of urine was present in four cases.

Cystitis was present in three cases.

Specific urethritis was present in two cases.

Secondary syphilis was present in one case.

Pyelitis was present in two cases.

Superficial abscesses were present in 11 cases.

Double parotitis was present in one case.

Suppurative otititis media developed in 10 cases.

Tender toes occurred in nine cases.

Periostitis occurred in one case, and arthritis in two cases.

Erysipelas was present in one case.

One patient admitted was about six months on in pregnancy. She had some albuminuria and pyelitis. She had three small intestinal hæmorrhages. She became jaundiced and developed a distinct cholecystitis which subsided without surgical interference. She made a good recovery from the typhoid and did not abort.

Widal Reaction :—The test is employed in all cases of suspected typhoid admitted to the wards. In ten cases of typhoid it was negative throughout the course of the disease. The reaction was tried in 109 cases on the day of discharge from the hospital and it was absent in 24.

The earliest date of its appearance was the third day of the disease ; the latest date at which it made its appearance was the 49th day of the disease. The average date of appearance of the Widal reaction was the 13th day of the disease.

Erlich's Reaction :—This was found present in 34.1 per cent of the cases in which it was tried. The average day of disease in which it appeared was the 11th. The average duration of its presence was two days.

Synopsis of Two Successful Cases of Operation for Perforation.

Case I.—D.D., aged 7 years. Case No. 5,200.

The patient was admitted to the hospital on the 31st December, 1900. For ten days previous to his admission he had the ordinary symptoms of typhoid, and was doing very well until December 29th, when he developed severe pain in the lower part of the abdomen, accompanied by tenderness, and he had some rigidity and distension. When admitted to the hospital, at 5 a.m., December 31st, the abdomen was tense but rigidity was not excessive and tenderness not very marked. Temperature 102.4° ; pulse, 132 ; and respirations, 36, on admission.

Patient was a bright boy, rather small for his age, and not very well nourished. Cheeks flushed ; expression somewhat pinched. From his admission to his operation, 13 hours later, his temperature went up slightly, and pulse and respiration became a little slower.

On opening the abdomen, free seropus was found present. Perforation was found in the ileum about 18 inches from the ileocæcal valve. The perforation was closed, the abdomen irrigated, and a rubber drainage tube inserted. He did nicely after the operation and, apart from a fæcal fistula which closed in a few days, and a ventral hernia at the sight of operation, which was attended to when he gained somewhat in strength, he got along very well and left the hospital in good condition.

Case II.—L.J., aged 23 years, male. Case No. 5628.

Patient was admitted to hospital on May 28th, 1901. At the onset of his illness, ten days previous to his admission, he had a feeling of general malaise, slight chilliness and disinclination to work, but was not ill enough to go to bed. His temperature when first seen by his physician was 101° and pulse 80. Rose spots appeared on the abdomen on the sixth day of the disease. Temperature some days reached 104° to 105,° but he was not feeling particularly uncomfortable.

At 11 p.m. on May 27th, immediately after urinating, he complained of pain over the hypogastric region. This was relieved by hot fomentations. On 6 a.m. on May 28th, he again had severe pain over the hypogastrium and some tenderness. At 9 a.m. his temperature dropped to 99.4,° and pulse to 90. At noon the area of tenderness was spreading. At 5.30 p.m. temperature was 102,° pulse 108. Tenderness was marked over the lower part of the abdomen, and there was considerable abdominal distension, particularly marked over the epigastric region. At 8 p.m. facial aspect was decidedly anxious and liver dulness was obliterated. Patient was brought in the ambulance and taken to the operating room, where operation was performed about 11 p.m.

On opening abdomen, considerable pus was found in lower part of abdomen. About 14 inches from the ileocæcal valve a perforation was found, which was closed. He left the table in good condition and made an uneventful recovery.

Synopsis of Nine Fatal Cases.

Typhoid Fever with Purpuric Eruption, Hæmorrhages and Repeated Chills.

Case I.—M.S., aged 20 years, female. Case No. 5536.

Patient was admitted to the hospital on December 17th, 1900, complaining of weakness, loss of appetite, general malaise and headache. Headache had been severe for eight days previous to her admission.

On examination, the patient was found to be a moderately nourished girl, skin hot, dry, and pale, and mentally she was quite clear. Rose spots were present on the abdomen. The abdomen was not distended or tender ; spleen was palpable ; Widal reaction was positive. Temperature 104,° pulse 108, respirations 24. She had some mitral regurgitation. The urine contained a small amount of albumin and Erlich's reaction was absent.

The subsequent events, were as follows :—Sponges were ordered for day after admission and were very well borne. She got some stimulant regularly. On December 22nd she was feeling weaker,—pulse 120 to 150, and temperature reached 105.° She had occasional slight chills. The following day she developed a purpuric eruption about the nose and on the front of the abdomen, and had three small intestinal hæmorrhages varying from one and a-half to three ounces. Sponges were stopped ; temperature continued high ; and on December 25th reached 105.8.° The pulse was weak and rapid, 130 to 150, in spite of stimulation, and respirations 30 to 36. She had one or two chills every day and an occasional small hæmorrhage from the bowels. There was no abdominal pain or distension. She had some vomiting and delirium. The pulse gradually became weaker and the respirations more rapid. The temperature remained over 102.4,° and she died on the morning of January 1st, 1902.

Typhoid Fever with Perforation.

Case II.—G.A., aged 28 years, male. Case No. 5583.

The patient was admitted to the hospital on January 3, 1901, complaining of weakness, pain in stomach, legs and feet, and sore throat. The following history was obtained. For a week previous to his admission he felt so weak that he had to remain in bed. During this time he had some diarrhœa and slight abdominal pain. Pain in legs and feet and soreness of throat had been present only for two days. Anorexia was present.

On admission he was found to be rather dull and listless. There was no abdominal distension or tenderness. Rose spots were present ;

spleen palpable. Temperature 98.6,° pulse 88, respirations 28, when admitted. Temperature soon rose to 101.°

Subsequent events were as follow :—On January 15th, he had some pain in the left hypochondriac region which was relieved by enema. On January 6th, he complained of pain in the splenic area in the forenoon, and about 6 p.m., on the same day, he began to complain of pain in the right lower quadrant of the abdomen. There was no increased distension and liver dulness was not diminished. Blood counts made from 9 p.m. to 3 a.m, showed from 12,000 to 14,000 leucocytes. Temperature 103,° pulse 104, respirations 24. On January 7th, the abdomen was more distended and there was considerable rigidity and tenderness in right iliac region. Blood count at 10.30 a.m., showed 33,000 leucocytes. Temperature came down to 97,° pulse 120, respirations 32.

Operation done at 3 p.m., January 7th. On opening abdomen dark coloured fluid and gas escaped. A perforation the size of a five-cent-piece was found in the ileum one foot from the ileocæcal valve, and fæces were escaping into the abdominal cavity. The perforation was closed and the abdomen irrigated. He came off the table in fair condition, but got rapidly weaker, and died about seven hours later.

Typhoid Fever with Erysipelas and Hæmorrhage.

Case III.—J.W., aged 17 years, female. Case No. 5625.

Patient was admitted to hospital January 17, 1901, complaining of headache, weakness, dizziness, pain in the back and cough.. She had had a cold from the first of the year. The headache, weakness, etc., had been present for a week previous to admission.

On admission patient was a stout well nourished girl, mental condition rather dull. Abdomen moderately distended and some general tenderness. Spleen was palpable ; rose spots present ; temperature 104.4,° respirations 32, pulse 120. Widal and Erlich reactions present. She had an acute vaginitis.

Subsequent events :—She was put on cold baths, which she required pretty regularly every three hours. The temperature kept up and the pulse rapid, 120 to 140. On January 30th, erysipelas of the face began to show itself. This gradually extended so that on February 7th, she was anæsthetised and multiple incisions made. On February 4th, she had two slight hæmorrhages from the bowels. On February 12th, 13th, and 15th, she had a small hæmorrhage from the bowels. On the 16th, an ischiorectal abscess was opened and considerable pus evacuated. The temperature varied daily from 100° to 105,° the pulse from 120 to 168, respirations from 36 to 62. She had an acute bronchitis. In spite of stimulation she got gradually weaker and died on February 18, 1901.

Typhoid Fever with Hæmorrhages.

Case IV.—A.R., aged 29 years, male. Case No. 6190.

Patient was admitted to the hospital August 10, 1901, complaining of headache, weakness, and fever. These symptoms had been present for a week. He had had some diarrhœa, no vomiting and no appetite.

On examination he was fairly well nourished and of muscular build. Skin hot and dry ; rather dull mentally. Abdomen slightly distended; no rose spots ; spleen not palpable. On admission temperature 100.8,° pulse 86, respirations 18.

On the day following admission the Widal and Erlich reactions were positive. On the next day rose spots were present and spleen became palpable. He was put on cold bath treatment and responded quite well. On August 24th, he became somewhat delirious and shivered a good deal, even when not having his baths. From this to the end he was very nervous and restless, and was delirious a good deal of the time. On August 26th, he had an intestinal hæmorrhage, two ounces of blood ; and on August 29th, he had another small hæmorrhage. When this hæmorrhage occurred he had a temperature of 102.2°, pulse of 160, and respirations 28. The temperature fell gradually to 97.4° ; the pulse became almost imperceptible at the wrist. The abdomen became much distended in the upper part, but no tenderness or pain. There was a constant twitching of the muscles of the face and limbs. He had some vomiting. He died on August 31st.

Post mortem examination showed ulceration of the ileum and colon with some blood in the intestines. There was hæmorrhage into the recti abdominis and ilio-psoas muscles and subacute nephritis.

Typhoid Fever with Perforations.

Case V.—W.C., aged 56 years, male. Case No. 6265.

Patient was admitted to the hospital September 7, 1901, complaining of headache, loss of appetite and weakness. His daughter had been suffering from typhoid fever about a month previously. Patient's symptoms had been present for a week. He had no diarrhœa but had slight abdominal pain.

On examination he was an average-sized, poorly nourished man, of fair intelligence. No delirium ; head somewhat retracted ; no abdmoninal distension. No rose spots ; spleen not palpable ; temperature 103.4,° pulse 128, respirations 28.

The subsequent events were as follows :—A few rose spots appeared on the abdomen on September 13th ; Widal reaction became positive September 15th. There was nothing out of the ordinary in the course of the disease up to September 19th, and it was of a moderate type. In the afternoon of September 19th, he had some pain in the abdomen just before micturating. This lasted only for a short time. At 10.45 p.m. he complained of some abdominal pain. Temperature 102.6,° pulse 108, respirations 24. At 11.30 p.m. he had severe abdominal pain, slight rigidity, and no distension, liver dulness normal. Temperature 104.2,° pulse 120. He rested some during the night and at 6 a.m., September 29th, the abdominal pain was less severe. Tenderness was most marked a little below the umbilicus. Temperature 100.2,° pulse 132, respiration 36. Blood count showed 7,000 leucocytes.

He was operated upon at 8 a.m. On opening the abdomen there was some seropus. There was a small perforation in the ileum about 15 inches from the ileocæcal valve. Perforation was closed and the abdominal cavity irrigated with saline solution. He came off the table in fair condition, and for the next 16 hours his condition continued the same. Then he began to complain of abdominal pain at times ; the abdomen became more distended and the pulse and respirations more rapid. He died September 22nd, 59 hours after the operation.

Post mortem examination showed some peritonitis and a second perforation had occurred, since operation, about eight inches from the ileocæcal valve.

Typhoid Fever with Hæmorrhages.

Case VI.—G.S., aged 36 years, male. Case No. 6271.

Patient was admitted to the ward September 10, 1901, complaining of headache, pain in the abdomen, and weakness. He had been ill for ten days previously and during this time had had some diarrhœa.

On examination, he was a well built muscular man, fairly well nourished. Skin dry and hot ; no rose spots ; spleen not palpable ; Widal reaction negative. Moderate abdominal distension and slight general tenderness over the abdomen. Urine contained considerable albumin and granular casts. Temperature 103.2,° pulse 108, respirations 28.

Subsequent events were as follow :—He was put on cold bath treatment. Erlich reaction appeared on September 13th, and Widal on September 15th. Temperature kept pretty high, but there was nothing special in the course of the disease until September 28th, when he had a small intestinal hæmorrhage ; and during the following day he had several large hæmorrhages. His temperature fell from 103.4° to subnormal. His pulse became weak and rapid. He did not recover from the effect of these hæmorrhages and died at noon on October 5th.

Typhoid Fever with Acute Delirium.

Case VII.—L.C., aged 32 years, female. Case No. 6281.

Patient was admitted to the hospital on September 12, 1901, complaining of headache, weakness, fever and backache.

On examination, she was of moderate build and fairly well nourished. Skin hot and dry ; rose spots present ; spleen not palpable ; Widal reaction positive. There was moderate abdominal distension and some tenderness in the splenic region. Temperature 103.4,° pulse 108, respirations 20.

The following are the subsequent events :—The course of the fever was a moderately severe one, the fever ranging from 101° to 104°. During the day time she was always quite calm and contented ; at night she was more restless and her mind would wander somewhat at times. On September 17, at 4.50 a.m., she was quite delirious for a time ; after this, however, she calmed down, talked quite sensibly, and appeared perfectly rational. About 10 a.m., while her nurse was complying with her request to get her a drink of water, she jumped from the window and sustained injuries the result of which proved fatal.

Typhoid Fever with Perforation.

Case VIII.—H.P., aged 21 years, male. Case No. 6329.

Patient was admitted to the hospital on September 19, 1901, complaining of headache, weakness, loss of appetite and vomiting. At onset of illness, two weeks previous to his admission, he had a good deal of chilliness followed by fever and sweating, and he had frequent vomiting. He had no diarrhœa ; headache was severe.

On admission, he was a fairly well built, moderately nourished man, of rather dull appearance. He had a cleft palate and a scar on the lip, the result of an operation for hare-lip. Skin warm and dry. There were a few rose spots present on the chest and abdomen. Slight abdominal distension ; spleen not palpable ; Widal reaction positive ; temperature 102,° respiration 26, pulse 120.

The subsequent events were :—He was doing very well and responded well to the cold baths until the morning of October 5th, when he began to complain of abdominal pain at 8 a.m. ; temperature 100.4,° pulse 96, respirations 26. The pain kept up all day and was general over the abdomen ; there was slight abdominal tenderness. No rigidity. Temperature, pulse and respirations remained about the same as previous days. On the following morning, October 6th, he still had abdominal pain but less severe. He had some tenderness all over the abdomen, but slight rigidity most marked over the lower zones. Temperature 100.6,° pulse 100, but of smaller volume than previously. During the forenoon he had a little vomiting. Repeated blood counts up to time of operation showed from 4,200 to 5,600 leucocytes.

He was operated upon at 3.30 p.m. On opening the abdomen there was evidence of considerable peritonitis. A large perforation was found in the ileum about 12 inches from the cæcum, and it was closed and the abdomen irrigated with saline solution. He came off the table in poor condition with pulse almost imperceptible, and it remained weak. Temperature rose to 105.8.° He died on October 8th, about 50 hours after the operation.

Typhoid Fever with Hæmorrhages.

Case IX.—J.B., aged 35 years, male. Case No. 6506.

Patient was admitted to the hospital December 13, 1901, complaining of weakness, general malaise, feverishness and flatulence. He had slight headache, no diarrhœa or vomiting. He had been quite ill for a week previous to his admission and had been delirious at night.

On admission, he was a slenderly built, rather poorly nourished man, of fair intelligence. Rose spots were present on the abdomen ; spleen palpable ; no abdominal distension or tenderness. Pulse regular but of low tension, temperature 100.6°, pulse 88, respirations 20. Albumin and casts in the urine.

Subsequent events were :—Widal reaction was positive on December 20th. Appetite remained very poor and he had some vomiting. He developed a good deal of abdominal distension and some pain, but not tenderness. Subsultus tendinum was quite marked. He had considerable cyanosis and in spite of the stimulation his pulse throughout his illness remained weak. Otherwise there was no special feature about his illness until 4.30 p. m. on December 30th, when he had an intestinal hæmorrhage of seven ounces. Temperature 101.2,° pulse 120. Three hours later the temperature was 99,° the pulse 120, and very weak. During the following night he had another hæmorrhage, about half the size of the previous one. In the early morning of December 31st, he was somewhat stronger, but about 7 a.m. he got suddenly weaker and died at 9.30 a.m.

Post mortem examination showed a good quantity of blood in the intestines. The ulceration from which the hæmorrhage occurred was in the ileum, about 20 inches from the cæcum. There was an early, bilateral, lobular pneumonia and a recent thrombosis of the femoral vein.

MALIGNANT PUSTULE.

BY

E. M. von Eberts, M.D.,
Medical Superintendent, Montreal General Hospital.

E. D., aged 50, was admitted to the Montreal General Hospital on 16th October, 1901, complaining of pain and soreness on the left side of the neck and general weakness.

Personal History.—A native of Germany. Served in the Prussian army in 1870-71, during which time he was invalided for two months with an attack of jaundice. A resident of Canada since 1891 and for the past eight years employed as a hide-dresser. The patient had been a heavy beer drinker for many years.

Present illness.—For three months previous to admission the patient had been employed in the scraping and dyeing of a large consignment of sheep skins imported originally from China.

On Saturday, 12th October, shortly after the noon hour, patient first felt a small 'pimple' on the left side of his neck which he squeezed, thinking it contained pus. He slept well that night but on the Sunday morning following chilly sensations were present, with distinct tenderness and some pain about the sore on the neck. Sunday afternoon patient remained indoor. Towards evening the swelling became much more marked: an oatmeal poultice was applied and the patient put to bed.

On Monday morning, 14th October, the patient was distinctly worse. Headache and loss of appetite were noted. The sore on the neck had become much larger, the pain more severe and attacks of chilliness succeeded at frequent intervals throughout the day. During the day the patient was seen by his physician, Dr. Hugh Lennon, who advised removal to the hospital.

On Tuesday, 15th, the margins of the sore had further extended, the left side of the neck was very markedly swollen with induration of the skin below the clavicle. Distinct chills occurred throughout the day with increasing severity ; anorexia complete, constant headache, rapid irregular pulse and marked prostration. No vomiting or diarrhœa. Patient still refused to be removed to hospital.

On Wednesday, 16th, all the foregoing symptoms continued with increased severity and the patient's condition was so critical that Dr.

Lennon again urged his removal to the hospital. Admission, 3 p. m., Wednesday.

Condition on admission.—Patient below the average height and rather stout. Face and hands deeply cyanosed, the latter cold. Respirations rapid and shallow. Extreme general weakness. Pulse not obtainable at the wrist. Temperature subnormal.

Thorax.—Lungs resonant throughout ; numerous fine rales over both bases. Heart dulness from 3rd interspace vertically, and transversely from mid-sternum to left nipple line: sounds distant and feeble : heart's action intermittent. Pulsations taken by stethoscope about 80 to the minute.

Abdomen.—Moderate distension. Liver dulness 6th interspace in right nipple line to subcostal margin: not palpable. Spleen not palpable.

Urine.—Sp. gr. 1018, neutral. No albumen, no sugar. Microscopically a few triple phosphates.

Lymphatic glands not palpable.

Skin.—Situated midway between the mastoid process and clavicle over the sterno-mastoid muscle on the left side of the neck was an ovoid, raised patch, 1½ inches transversely by 1 inch in the vertical, the central portion flattened, somewhat depressed, dark brown in colour and of a granular appearance: the periphery raised above the centre and also above the surrounding skin and composed of numerous closely placed vesicles of a dark purplish color containing blood-stained fluid ; the whole tumor resembling a nævus in general appearance. No discharge from the surface of the sore. Tenderness on manipulation not marked, underlying tissues infiltrated. The skin immediately surrounding the tumor was but slightly infiltrated and not at all reddened. Immediately above the left clavicle was a long narrow strip denuded of epidermis: a result of the poultice. In the upper zone of the thorax from the clavicles to the second ribs and extending across the sternum was seen a crescentic area of inflammatory infiltration with small purplish patches of extravasation. A few small vesicles were also present, chiefly to the left of the median line.

Over the front of the abdomen and legs could be seen a faint purplish, macular rash, and in either flank areas of acute dermatitis which showed on pressure numerous minute petechiæ with œdema of the subcutaneous cellular tissue. The anterior and posterior margins of these areas showed a well defined, irregular, raised border, closely resembling that of an erysipelatous patch, but without glazing of the skin or the presence of bullæ.

Diagnosis.—Owing to the characteristic features of the local lesion and the early onset of severe constitutional symptoms a diagnosis of anthrax infection was at once suggested, and the fact that the patient was employed in the scraping of imported hides strongly confirmed this diagnosis. Bacteriological examination was delayed owing to the urgency of the case.

Treatment.—Immediately upon admission the patient was given 1-15 gr. strych. sulph. hypodermically and an ounce of brandy by mouth The left side of the neck was then prepared for operation in the usual way and with the aid of a 1 per cent. solution of cocaine the tumor was excised, the insisions being placed fully one-quarter of an inch beyond the outer zone of vesicles and carried directly down to the deep fascia. Beneath the central portion of the tumor the fascia was infiltrated and in its removal the superficial fibres of the trapezius muscle were exposed.

The wound was closed with silkworm-gut sutures and a gauze drain inserted at the anterior extremity. Dry sterilized dressings applied.

The patient was placed upon a fluid diet and strych. sulph. gr. 1-30 and whiskey, oz.1, every four hours, prescribed, together with one ounce of somatose in milk every hour.

Diary.—

Thursday, 17th Oct.—Patient's general condition greatly improved. Cyanosis of the face and hands less marked. Frequent cough with abundant serous expectoration, at times tinged with blood. Temperature range 102.2-5° at 6 p.m, on the 16th, to 99° at 8 a.m., on the 17th. Pulse present in radials about 60, very irregular in volume and rhythm. Moderate diarrhœa (4 stools in 24 hours). Abdominal distension marked. Spleen not palpable.

Skin over lower part of thorax and front of abdomen acutely inflamed and œdematous. In flanks the margins of inflamed skin well defined, irregular in outline, acutely tender and rapidly spreading backward. Over the zone of infiltration in upper part of thorax the extravasations had become more extensive with the formation of a few small transparent vesicles.

Nourishment well taken. Slept about two hours. Urine negative.

Friday, 18th Oct.—General condition showed further improvement. Cyanosis subsiding ; cough less frequent, and expectoration mucoid. Examination of lungs negative apart from numerous fine râles at bases. Temperature range 101,4-5° to 98°. Pulse larger but still irregular.

Diarrhœa, 4 stools. Abdominal distension more marked. Spleen not made out to be enlarged.

The inflammation of the skin had extended across the small of the back in a narrow band. Rash less brilliant over the front of the abdomen and œdema subsiding. Appetite returning. Slept 6 hours. Urine negative.

Dressings changed and gauze drain removed. Smears from the latter showed a few cocci only. No swelling or tenderness about wound.

Saturday, 19th Oct., a.m.—Patient passed a good night. Temperature normal. 3 diarrhœa stools in 24 hours. Rash over abdomen, sides and back had faded and œdema lessened. A small purpuric area had appeared in the epigastric region. In upper part of front of thorax where cutaneous hæmorrhages had occurred, the absorption color changes were marked.

At 8 p.m., temperature rose to 100°, the areas previously occupied by rash became inflammed and in addition the eruption spread rapidly for a distance of four inches below Poupart's ligament on the front of the left thigh, involving at the same time the root of the penis and upper margin of scrotum, and accompanied by pain and tenderness.

Sunday, 20th Oct., a.m.—Patient convalescent. Complained of being hungry. Moderate diarrhœa. Abdominal distension very marked. Percussion note over splenic area tympanitic, and spleen not palpable. Rash had again faded. In epigastric and umbilical regions œdema more marked. Urine negative. With evening rise of temperature to 100,2-5°, skin again became reddened, but no extension of the rash noted.

Monday, 21st Oct.—Temperature range 97,2-5° to 99,3-5°. Patient felt much better all day. Less abdominal distension and arrest of diarrhœa. Rash fading rapidly.

Sutures removed from neck. Apparently perfect union. Dry dressing applied. Extensive herpetic eruption on lower lip.

Tuesday, 22nd Oct.—Temperature range normal to 99,1-5°. Rash entirely disappeared with the exception of a few petechiæ in lower axillary zones, and purpuric areas before noted.

Wednesday, 23rd Oct.—Dressing on neck changed; wound found gaping. Base of ulcer gray and glazed; no discharge; no tenderness or swelling about edges. Stimulating dressing of balsam of Peru and nitrate of silver applied.

14th Novmber.—Patient discharged "well." Temperature remained normal after 23rd Oct., and convalescence was without event.

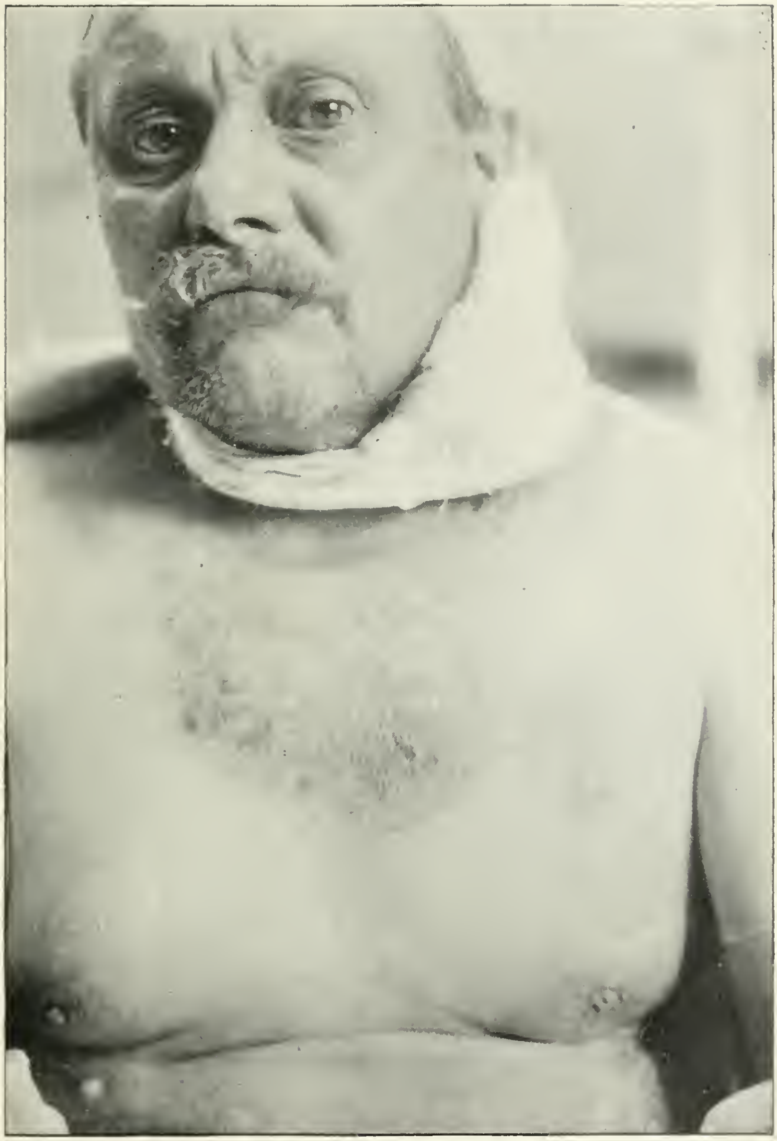


PLATE I. Showing area on front of thorax occupied by purpuric eruption. The degree of infiltration of subcutaneous tissues in this region seen better in Plate II.

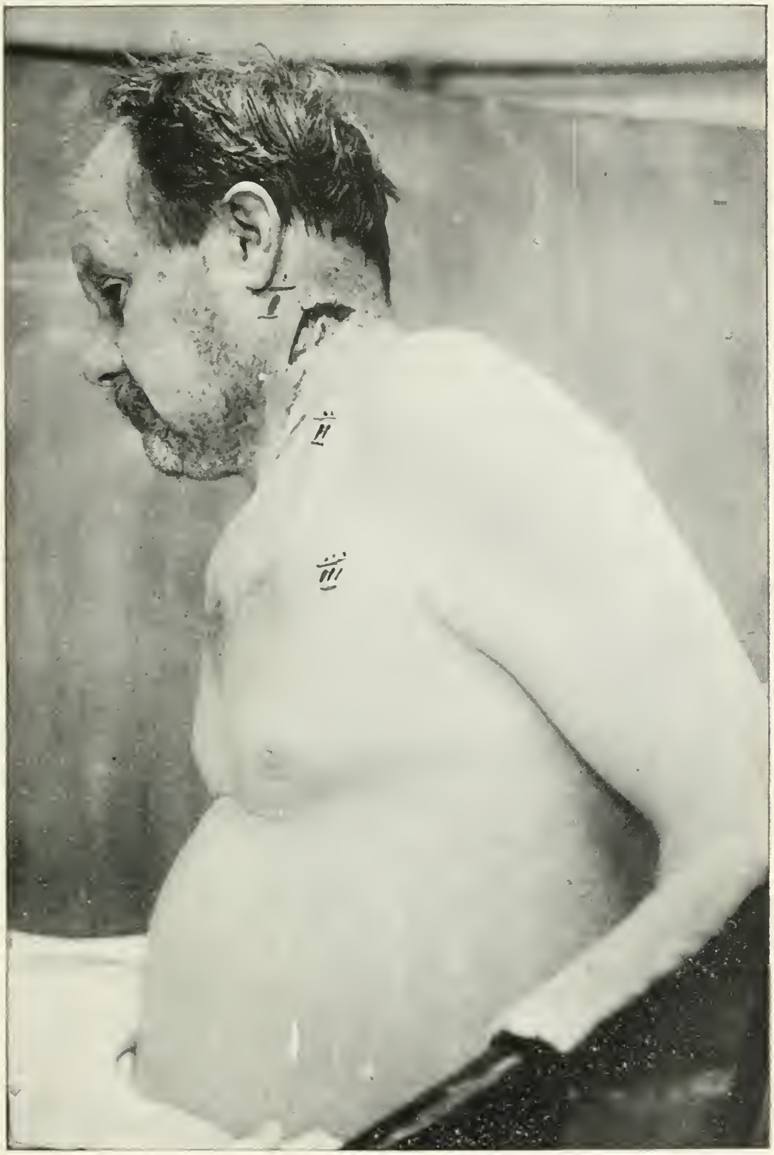


PLATE II. I. Site of tumor after removal of sutures.
II. Ulcer following burn.
III. Crescentic area of infiltration ; side view.

Plate also shows the marked abdominal distension present throughout course of illness.

PLATE III. (No. 4, object, No. 1 eye piece.) Micro-photo. Skin section showing anthrax bacilli in large numbers.

Pathological report by Dr. John McCrae :—

"Specimen consisted of skin and subcutaneous tissues. Tissue surrounding pustule was indurated, the induration being chiefly superficial. Smears from the blood expressed from the tumor showed small numbers of typical anthrax bacilli. On section abundant masses of long interlacing threads of anthrax bacilli, as well as numerous scattered bacilli found ; most numerous in the superficial layers, both epidermal and subepidermal. At a distance of one-quarter of an inch from the surface none were found.

Inoculations of fresh tissue made into white mice did not result in death of animals. Wounds reacted healthily, and when killed anthrax bacilli were not demonstrable in their tissues. Possibly the tissue inoculated did not contain bacilli in any considerable number as it was taken from the deeper parts of the tumor.

Blood cultures taken at operation, or various media, remained sterile."

I am indebted to Dr. Geo. E. Armstrong, during whose service the patient was admitted, for the privilege of treating the case.

AN ANOMALOUS CASE OF LEUKÆMIA.*

BY

W. Grant Stewart, B.A., M.D.,

Lecturer in Medicine, University of Bishop's College, Montreal; Physician to the Western Hospital, Montreal.

AND

G. Gordon Campbell, B.Sc., M.D.,

Lecturer in Medicine, McGill University; Assistant Physician to the Montreal General Hospital.

The case which Dr. Gordon Campbell and I are to report to-night is an anomalous case of leukæmia, interesting from the early age of the patient, the rapidity of the course of the disease, the fatal termination, and the atypical appearance of the blood on microscopical examination.

W.M.P., male, aged six years, walked to my office with his mother on May 11th, 1901, complaining of poor appetite, weakness and marked anæmia. Sixteen days later he died.

Family History:—The mother is not strong. Patient has one sister and brother neither of whom are strong. Since the patient's death, the brother four years old has been anæmic and has had a number of attacks of epistaxis. Examination of his blood by Dr. Gordon Campbell showed nothing but a simple anæmia.

Previous History:—Patient contracted a cold in March, 1901, and never seemed to have entirely recovered his health. His appetite became impaired, and he began to show signs of anæmia.

April 1, 1901:—Examination made to-day with following notes. Anæmic, submaxillary glands enlarged, appetite poor, bowels regular, no headaches. Mother says he seems flushed at night. Was given syrupus ferri iodidi, ten drops three times a day.

April 12:—Has a slight attack of diarrhœa, temperature 100° F. Rest, milk diet, bismuth, liquor opii sedativi and mistura cretæ were prescribed.

April 16:—Much improved. Pulse 124, temperature normal. After this date I did not see the patient until he was brought to me by his mother on May 11, 1901.

May 11:—Patient anæmic, pulse 164, temperature 101°. Faint systolic murmur at the apex. Appetite poor, is grave and gay, tired and lively, alternately. Ordered rest in bed and a mixture containing ammonio-citrate of iron and nux vomica.

---

* Read before the Montreal Medico-Chirurgical Society, February 21, 1902.

May 13 :—Bowels loose, pulse 116, temperature 98.4°. Perspires a good deal at night and complains of pains in his legs.

May 14 :—Consultation with Dr. Blackader, who recommended atropine 1/400 of a grain at bedtime, gradually increasing the dose, and continuation of the administration of iron. The case was looked upon as one of anæmia.

May 15 :—Had a restless night from headache. Pulse 120, temperature 99°.

May 17 :—First attack of epistaxis commenced at 1.30 a.m. Saw the patient at 3.30 a.m. ; he vomited about half a pint of blood which had evidently trickled down the posterior nares and been swallowed. The left nostril was plugged with cotton soaked in alum and tannic acid and it soon controlled the hæmorrhage. Gave suprarenal capsules two grains every four hours for four doses. Extract of bone marrow was ordered. Patient is very weak, pulse 136, temperature 100°.

May 18 :—Rested well, takes food fairly well, temperature 100°, pulse 130, murmur seems less distinct.

May 19 :—Passed a restless night, weak, murmur louder. Ordered tincture of digitalis two minims every four hours.

May 20 :—Patient had another attack of epistaxis at midnight. Nostrils were plugged by Dr. F. E. Thompson, and later by Dr. H. D. Hamilton with adrenalin. Pulse 142, temperature 104°. Ordered strychnine, grain 1/100, four times daily. The iron, extract of bone marrow, and liquid peptonoids were continued.

May 21 :—Hæmorrhage from the right nostril plugged by Dr. Hamilton. Patient very weak and profoundly anæmic. Ears look like wax and lips and conjunctivæ very pale. Submaxillary glands enlarged. In the afternoon blood was oozing from the nostril again, and it was again plugged by Dr. Hamilton. Patient is very restless and was given liquor opii sedativi, three minims as required. Tongue had become very sore and the breath was offensive. A wash of ten grains to the ounce of argentic nitrate solution was ordered for the mouth.

May 25 :—For the past four days the patient's symptoms and condition has remained about the same, but he has become weaker and the anæmia is more marked. Temperature 103° to 104°, pulse 160. Tongue ulcerated and very offensive.

In the afternoon the patient was seen by Dr. Gordon Campbell and a blood examination made with the following result :—Erythrocytes 750,000, leucocytes 40,000, hæmoglobin 21 per cent.

May 27 :—Patient died at 3 a.m., temperature 102°, pulse 180, before death. He was very restless during the night. The submaxillary glands were noted as much swollen after death.

A few points worth noting about this case are :—The rapid course and fatal termination, the high temperature towards the latter part of the illness, the severe attacks of epistaxis, the indefinite cause, possibly following a primary anæmia, and lastly the age of the patient. Unusual features, also, are the absence of splenic enlargement, and the extreme diminution in number of the red cells of the blood.

The blood examination of this case of Dr. Stewart's reveals a condition which it is difficult to classify, as it does not correspond exactly to any of the well recognized forms of blood disease. The blood examination was made the day before death, and after the child had had repeated large hæmorrhages, factors which of themselves would tend to affect both the number and form of the blood cells.

The blood was taken from the lobe of the ear and the Thoma-Zeiss instrument was used for the estimation of the number of the corpuscles, the Fleischl instrument for the proportion of hæmoglobin, two estimations with the latter being made and the average taken. The finding was as follows :—

Hæmoglobin 21 per cent.
Erythrocytes 750,000.
Leucocytes 40,000.

The proportion of leucocytes to erythrocytes is about 1 to 19, and there is a relative increase in the hæmoglobin amounting to a colour index of 1.33.

At the same time that the above examination was made smears of the blood on coverslips were also obtained and fixed by allowing them to remain in alcohol and ether over night. They were then stained with Erlich's triacid stain, and with eosin and hæmatoxylin. Unfortunately the triacid stain was not in good order and the colours, although showing well enough to be distinguished, are not very distinct. Studying these slides under the microscope one sees the folowing cell forms :—

Lymphocytes :—These show a very deeply-stained nucleus in all the slides, but in no case is the nucleus evenly stained as in usual in normal blood, but contains numbers of darker spots, some of which in the hæmatoxylin specimens are coal black. In no case do the darker spots appear in the surrounding cytoplasm of the cell. The lymphocytes vary but little in size, being almost all smaller than the red cells and they are the most easy to determine of all the forms of leucocytes present.

Polynuclear :—One can easily recognize two distinct forms of polynuclear ; the first with fairly dark staining nucleus showing as separate divisions in the cell, and a larger form in which the nucleus is distinctly multilobate but occupies more of the cell body, while at the same time it stains much less deeply than normal. These latter cells are very abundant and form about 75 per cent. of the whole number of polynuclears. Both forms show neutrophile granulations, but the granules in the normal are larger and take the stain better than in the other form.

Large mononuclears :—I was not able to recognize any cells definitely as belonging to this class. In one slide which I stained with methylene blue there was no evidence of any basophilic granulation in any of the cells.

Eosinophiles :—Here again I was only able to recognize very few definite eosinophilic polynuclears ; the numerous cells containing eosinophile granules nearly all appeared to have but one nucleus.

Myelocytes :—These are fairly numerous and of two, perhaps three, distinct varieties. (1) Neutrophiles of about the size of a polynuclear, but with a single nucleus and well stained granulations, the myelocyte of Erlich. (2) A very large form containing a large faintly stained nucleus, and small, poorly-staining granules. Besides these are (3) a small number of mononuclear cells with eosinophile granules, and in some of these large and small granules can be seen in the same cell, a point which Ewing holds to be pathognomic of myelocythemia.

The red cells show considerable disproportion in size, but no poikylocytosis. Normoblasts are fairly numerous, one being seen in about every six fields or so, but there are no gigantoblasts.

A differential count of about 500 leucocytes was made, the percentages given are of the whole number of cells including the myelocytes.

Lymphocytes number about 25 per cent., polynuclears of all forms about 45 per cent., and the remaining 30 per cent. is made up of myelocytes, of which the eosinophilic ones form about 3 per cent.

With regard to the differential diagnosis, four diseases have to be considered :—Pernicious anæmia, anæmia infantum of von Jaksch, post- hæmorrhagic leucocytosis and leukæmia.

In the small number of red cells, the hæmoglobin index and the history of the case, the condition corresponds very closely to pernicious anæmia. When we consider, however, the proportion of leucocytes to red cells, the absence of gigantoblasts and the presence of myelocytes in large numbers, I think we must exclude this disease, even supposing that the leucocytosis was in part due to the repeated hæmorrhages.

Anæmia infantum is a disease of early childhood up to four years of age. In the case reported by von Jaksch from which it got its name, the number of red cells was only 820,000 and the white 54,000, in this respect much resembling our case. On the other hand reported cases of this disease have shown relatively few myelocytes with increase in the large mononuclears and a great number of nucleated red cells. In many of these cases there is difficulty in differentiating them from pernicious anæmia.

Post-hæmorrhagic leucocytosis is also excluded by the character of the white cells present.

Leukæmia is, then, the disease to which we are narrowed down. Of the two forms, lymphatic leukæmia is excluded by the relatively small proportion of lymphocytes which, although here presenting about 25 per cent. of the total, and thus showing a relative total increase, are not sufficiently numerous to warrant our calling the disease lymphatic leukæmia. Is, however, the condition found consistent with our conception of spleno-myelogenous leukæmia ? The microscopial examination of the blood corresponds very closely to the blood state of this disease, except in the presence of an unusually large number of lymphocytes. But it is well known that in all blood diseases, in fact in all acute diseases of infancy and early childhood associated with leucocytosis, the lymphocytes are more numerous than in similar conditions in later life. The absence of any enlargement of the spleen can be explained in one of two ways. The case was acute and the spleen may not have had time to reach any considerable degree of enlargement, owing to the rapidly fatal termination. Fibroid change is responsible for much of the splenic enlargement met with in this form of the disease, and it is necessarily of slow growth. The other explanation, and I think the more probable one, is that the pathological lesion was almost entirely in the bone marrow and the condition can be more correctly called a myelocythæmia. With regard to the great diminution in numbers of the red cells, I think this can be partly accounted for by the repeated hæmorrhages, a similar case having been reported in which the autopsy verified the diagnosis. The relative increase in hæmoglobin I am not prepared to explain, but as all who have used the Fleischl hæmoglobinometer will admit, it is extremely difficult to get accurate readings below 35 per cent., and it is not unlikely that it was my estimation which was at fault.

EXTENSIVE LACERATION OF THE CERVIX AS AN IMPORTANT FACTOR IN EARLY ABORTION.

BY

R. W. Boggs, M.D., New Westminster, B.C.

For some years past my attention has been attracted by the frequency of abortion in early pregnancy, and I endeavoured to discover some possible or probable cause apart from the etiology generally laid down in our obstetrical literature. The further I pursued my enquiries, the more I became convinced that cervical laceration is responsible for a greater number of such cases than are usually attributed to that cause. As soon as I became deeply interested in this matter, I began to observe my cases more closely, and eventually found that where I had an early abortion, say in from four to ten weeks pregnancy, the patient was found to be a multipara, and on examination a laceration of greater or less degree was invariably discovered. The deep bilateral laceration is the one I have found most frequently associated with abortion. Such lacerations will usually admit the tip of the index finger up to the internal os, the integrity of the lower segment of the uterus being nearly or entirely destroyed. Many primiparous patients abort early, but this I have always found to be purely accidental, or due to some imprudent act, or to lack of knowledge of the care and precaution usually necessary to tide a woman safely over her period of pregnancy.

In these cases we generally experience more or less difficulty in getting the product of conception out through the cervix and os uteri, even when some degree of dilatation has been employed, whereas, in cases in which early pregnancy is interrupted in multiparous patients, who can give no account of any accident, blow, fall, mis-step, lift, over-exercise, nervous excitement, or any other known cause, the ovum will usually come away quite easily, and may often be found by the attending physician lying in the vagina, it having escaped from the uterus without the patient's knowledge, or possibly accompanied by slight pain or no pain at all. I have had several cases in which the first intimation the patient had of abortion taking place was a gush of blood from the vagina washing out the dislodged ovum. The frequency with which this condition occurs is at least somewhat singular and sets us looking about for a direct and constant cause. We are well aware that in strong, healthy women, who have borne several children, the ovum should not separate from the uterine wall without some assignable accidental cause. There may be a combination of circumstances which facilitate separation of the ovum from its attachment to the uterus, but I am strongly disposed to the opinion that the laceration, especially when severe, is very largely, if not wholly, accountable for the interruption to pregnancy.

While practicing in the East and in this city (previous to 1894) I had a number of very interesting cases of very early abortion which I was able without doubt to attribute to severe cervical laceration, but the clinical records of these were destroyed in the fire of 1898. I am, therefore, unable to quote them here. I have collected a few cases from my clinical notes since 1894 which tend in a great measure, I think, to establish the ground of my contention. These I give below.

1896, February 25th, Mrs. McN. aborted in the 5th week.
1898, August 20th, Mrs. McN. aborted in the 6th week.
1899, September 21, Mrs. McN. aborted in the 10th week.
August 8th, Mrs. H. aborted in the 4th week.
August 21st, Mrs. M aborted in the 9th week.
1900, April 3rd, Mrs. M. aborted in the 5th week.
March 15th, Mrs. D. aborted in the 6th week.
1901, April 6th, Mrs. L. aborted in the 7th week.

In all of the above cases the patients were multiparæ and all suffered from extensive cervical laceration. I am surprised that our literature is so meagre on this subject. There is little doubt that endometritis plays a considerable part in bringing about early abortion, but I am held to the conviction that in a large proportion of cases the cause is purely mechanical, owing to loss of sustaining power of the cervix.

In support of this opinion I cite a very noticeable case I had in the east where the patient a strong, healthy multipara, had aborted four or five times. When she consulted me she was pregnant several weeks. On examination I found an extensive bilateral laceration which I very carefully repaired under chloroform, and she recovered nicely and carried her child to full term. The usual procedure would probably have been curettage before repair, but for obvious reasons I omitted this, and I think it may be possible that though a condition of endometritis may have been present and contributory to her previous abortions, the repair to the cervix may have set up a healthier condition of the endometrium which together with the support given at the cervix, enabled the ovum to maintain its integrity to full term.

From a solely mechanical point of view and apart from any diseased condition of the uterus, the growing ovum, daily increasing in volume, must require the support of a sound intact cervix in order for the patient to be assured with any degree of probability that she will terminate her pregnancy normally. We know that when consulted by a pregnant woman suffering from an extensive laceration, as to the outlook, our prognosis must be particularly guarded.

I think it is the duty of every physician, on being consulted by a woman with a lacerated cervix, especially if she gives a history of one or more early abortions, to advise immediate repair with curettage if found to be necessary, instead of the useless palliative treatment so frequently recommended.

SOME VARIATIONS FROM THE TYPE IN PULMONARY DISEASE.

BY

COLIN K. RUSSEL, B.A., M.D.,

Resident Physician in the Royal Victoria Hospital, Montreal.

The following cases admitted under Dr. Martin at the Royal Victoria Hospital have seemed worthy of record as presenting features somewhat uncommon as regards the diagnosis and the course of certain forms of pulmonary disease.

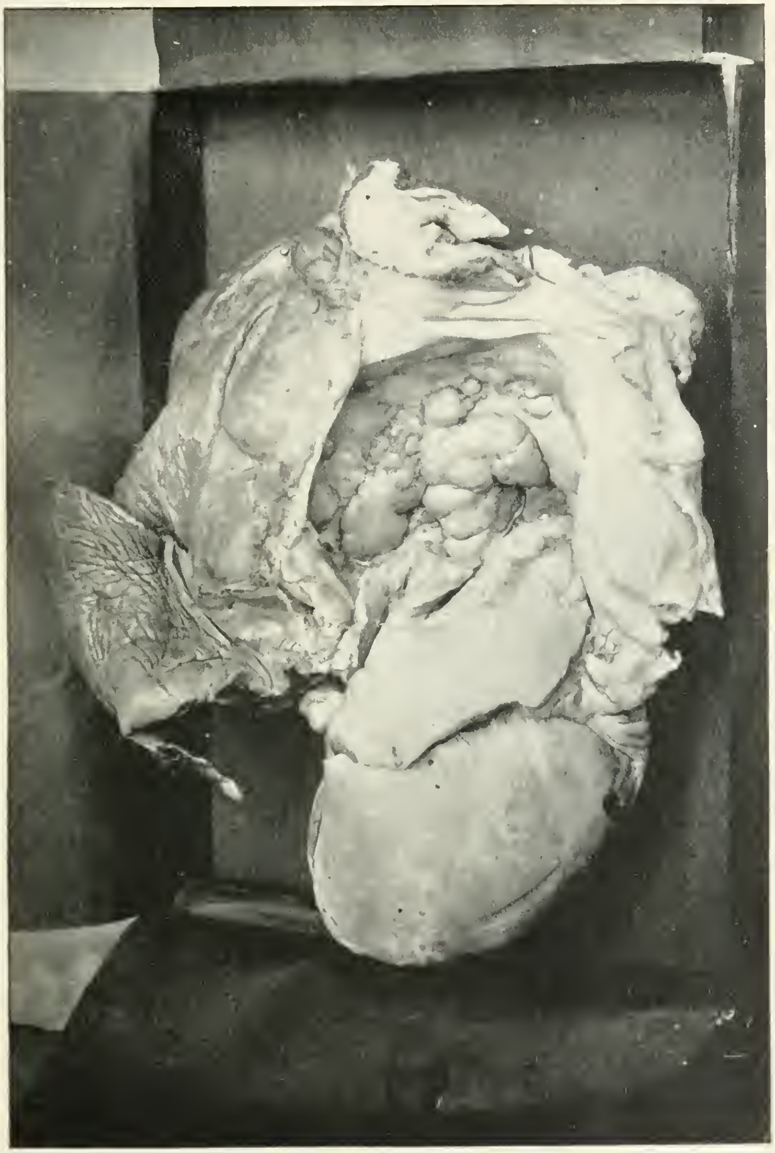
CASE I :—*Enormous abscess of the right lung involving the lower lobe; no expectoration; physical signs of empyema; many unsuccessful exploratory punctures; pus finally obtained and found sterile.*

A. S., æt. 22, a patient of Dr. Vipond's, had been sent into the Hospital at first under Dr. Buller's care for lateral sinus thrombosis. The symptoms had been obscure for some two weeks previously with chills and fever, when suddenly pain developed in the left ear with definite signs of mastoid disease. Operation was performed on admission with a satisfactory result so far as the local condition was concerned. The fever, however, persisted and occasionally chills, and after five days, examination revealed in addition involvement at the base of the right lung. A friction rub could be felt, and there was dulness on percussion with diminution in the breath sounds, in the vocal resonance and fremitus.

Several exploratory punctures were made with a large sized needle in the hope of obtaining pus from the supposed empyema but with a negative result. At the end of a week or ten days examination revealed the condition unaltered; locally about the mastoid the wound was improving but the temperature and chills persisted. Exploratory puncture of the chest was again tried several times and the needle inserted up to the hilt and pus vainly sought for.

A few days later, that is some three weeks after the operation, infection of the skin surrounding the wound was observed and after being duly treated was thought a possible explanation of the persistent evidence of sepsis; but the general symptoms were still unallayed.

Cultures of the blood revealed nothing, and there was no peptone in the urine. Apart from the condition in the lungs no other physical sign was evident, to account for the general symptoms. In the fourth week of her trouble, convulsions suddenly developed and she was



Sarcomatous Metastases in Pericardial Sac.

thought then to have developed some complication in the brain. It was impossible, however, for Dr. Buller to detect any extension of the optic neuritis to confirm such a suspicion, and inasmuch as these symptoms subsided within 24 hours, not to reappear, abscess of the brain could not be considered as explanatory of her general septic condition, and the convulsions were regarded rather as a neurosis.

For this reason the lung was still looked upon as the only explanation of the septic condition and repeated punctures were made. That an abscess was present was rendered all the more likely from the presence of a marked leucocytosis, over 33,000 white cells being found; the absence of anything more than an irritating cough and absolutely no expectoration rendered it more than probable that an empyema rather than an intrapulmonary abscess was present, and yet only after eight or ten punctures was pus finally found, and that in small amount. Operation was recommended and performed by Dr. Garrow. In addition to an acute pleurisy there was found in the lower lobe a large gangrenous cavity containing but a few drops of pus. From this, cultures were taken and proved sterile. The patient failed to rally for more than a few days after the operation and only a partial autopsy was performed, sufficient, however, to show that apart from the lung condition there was nothing else to account for the course of the symptoms.

The case is interesting more particularly from the point of view of physical examination. With a cavity of such a size and which apparently communicated freely with the large bronchi there were at no time present the ordinary physical signs of cavity, neither cavernous breathing, cracked pot resonance nor even a tympanitic note on percussion. The presence of the pus was only ascertained after numerous explorations and the fault did not seen to be either in the size of the needle nor in the depth to which it was inserted. Perhaps the small quantity of pus present at the operation indicated the difficulty one might have in coming upon it, though it is hard to believe that a cavity occupying practically the whole lower lobe of the right lung should not have had during all those weeks more pus in evidence.

The absence of peptone in the urine here is an additional proof of how valueless this symptom often is as indicating the presence or absence of pus.

Case II:—*Bilateral pulmonary sarcoma; secondary to mediastinal lymphosarcoma; pressure on the superior vena cava and right sympathetic and on the main bronchus giving signs of cavity; sarcomatous pericarditis.*

Mrs. G., æt. 22, admitted under Dr. Martin in October, 1901, complained of cough, smothering sensations and swelling of the right breast. Her illness had begun 18 months previously with progressive pallor, dyspnœa and weakness. She had noticed some nodules in the neighbourhood of the right clavicle and had observed during some months that they very gradually increased in size. Apart from these symptoms and some loss of flesh there was nothing worthy of record till shortly before her admission, when she developed a right pleural effusion for which she was tapped by Dr. White. Her past history had been good as was also the record of her family.

On admission to the hospital she was found to be anæmic and suffering from orthopnœa ; she was considerably emaciated except that the right arm and chest were unusually large owing to a fairly extensive œdema. The *right pupil* was much more contracted than the left. The lymphatic *glands* on both sides of the trachea were found to be distinctly enlarged, freely movable and fairly hard. So too were the glands in the axillæ, and, that those of the peribronchial and mediastinal regions were likewise involved seemed evident from the marked dulness on percussion over the sternum. The *veins* on the right side of chest and abdomen were very prominent as were also those about the right shoulder. Over the right scapula there were two or three *small subcutaneous nodules* one of which was subsequently removed for examination and found to be a fibro-sarcoma.

The examination of the *lungs* showed a bilateral pleural effusion, more especially on the right side, which when removed revealed in addition a marked consolidation of the right lung in its upper two thirds with the classical physical signs thereof. There was also consolidation of a small area in the left apex although the apparently great involvement of the mediastinal glands rendered it difficult to say to what extent some of the signs were due to their presence.

The *heart* was normal so far as auscultation could reveal; on percussion its outline could not be satisfactorily ascertained owing to the presence of the enlarged mediastinal glands. The *blood* showed a sight leucocytosis and otherwise the characteristic features of a secondary anæmia. In the abdomen there was slight ascites. The urine was normal.

Progress of the case.—The right chest would fill up almost daily after each tapping and with the progress of the disease, during some weeks, it was found that the œdema of the right arm and right side of the chest was likewise persistent, and the right breast became large and puffy and at times painful ; there was evidently, then, *pressure upon the superior vena cava.*

The examination of the lung afforded still further evidence of interest, for, about six weeks after admission, a tympanitic note was discovered behind at the level of the 4th dorsal vertebra extending downwards and to the right as far as the axilla. Cavernous breathing and Wintrich's sign of cavity were present though the coin sound was absent. There were no rales present whatever and the conclusion was that *one of the main bronchi leading to the lower lobe of the right lung was pressed upon by the surrounding neoplasm.*

Later on and some weeks before her death the patient developed a pericardial friction, not constantly present during the first few weeks of its detection, though later on persistent and progressively more intense, the conclusion being naturally that a secondary sarcoma had here developed.—(Fig. v.)

The larynx was carefully examined by Dr. Birkett and though displaced was not found to be involved in the new growth. *Examination with the X-Rays* revealed extensive shadows covering not only the right lung and the area of the mediastinum but likewise a portion of the apex of the left and extending downwards over the area of the liver which was subsequently found to have been extensively pushed down.

Progressive weakness followed the rapid extension of the disease and the patient succumbed some three months after admission.

A complete *autopsy* was performed by Dr. Adami and a generalised lympho-sarcomatosis found, with extensive secondary involvement of the lung in one large hard mass at its upper two-thirds with pressure directly upon the main bronchus as suspected and invasion of the superior vena cava to its almost complete occlusion, and a fairly extensive warty sarcomatous pericarditis.

A CASE OF EPILEPSY—APPARENTLY OF NASAL ORIGIN.

BY

Robert Craig, M.D.,
Laryngologist to the Weztern Hospital, Montreal; Associate Lecturer on Laryngology, University of Bishop's College.

Medical men who devote their lives to the study of a special branch of medicine or surgery, are occasionally accused by the general practitioner of attributing all the ills that flesh is heir to, as being caused by disease or abnormalities of the organs which they treat. In bringing this case before you I do not wish to give the impression that I consider epilepsy of nasal origin is a common occurrence, but the connection existing between the two in this case is, I think, apparent and interesting.

Hack was the first to draw the attention of the profession to the relationship existing between nasal disease and epilepsy, and since his case was published, many very similar ones have been recorded in medical literature by competent and trustworthy observers. The following case came under my observation in April last, being kindly referred to me by Dr. George Fisk.

W. M., aged 19 years, stated that he had suffered from "nose bleed, headaches, and epileptic fits for the past five years." For six months previous to consulting me the fits were becoming more frequent, appearing every alternate month with increasing severity. During the attack preceding the last one the patient was unconscious for seven hours.

Present Condition.—Poorly nourished young man with a sallow complexion, unable to concentrate his mind upon his daily work and inclined to feel despondent. He was suffering from a slight attack of indigestion when he first came under my observation, for which he was receiving appropriate treatment. The organs as far as could be ascertained were normal.

Nasal examination revealed a small ulceration in the right nostril on the anterior half of the septum, associated with a large septal spur extending almost from the anterior naris of the right nostril to the clivana, and pressing on the posterior half of the middle turbinal. The left nostril was normal. There was considerable congestion in the naso- and pro-pharynx.

I advised treatment of the nasopharyngeal condition and removal of

---

[*] Read before the Montreal Medico-Chirurgical Society, Jan. 17, 1902.

the nasal obstruction. Since the treatment of the nasopharyngeal condition the patient has been able to attend to his daily duties, he has gained considerably in weight and has had no recurrence of the headaches, nose bleeds or epileptic attacks.

When one considers the anatomical distribution of the nerves and vessels of the nose and their intimate relationship with the meninges and brain, they will readily understand why any abnormality in this region should be followed by a reflex neurosis in certain subjects. In this case, in all probability the nasal obstruction caused considerable interference with respiration and its resulting deleterious effects. The incomplete drainage of the nostril produced a nasopharyngeal catarrh, at the same time disturbing the normal functions of digestion. These factors were sufficient to upset the nervous equilibrium in a not too robust individual and manifested themselves by epileptic attacks.

Discussion.

Dr. George Fisk said he remembered the patient very well. He came to town about the middle of March to consult a physician. He went to a specialist who told him he had epilepsy. His condition now became worse ; he had fits of crying and some hysterical symptoms. When he was called, he was recovering from one of these fits which took him while he was leaving the dining room of the hotel where he was staying. He was in a semi-conscious condition. Thinking that perhaps the gastric condition was a factor in the causation of the case he had treated him to find out if he had a tape-worn, as another member of the family had had tape-worm, but without result. Ten days later another attack came on and Dr. Fisk suggested that the nasal condition might be a possible cause and recommended him to Dr. Craig.

Dr. H. D. Hamilton said it was fortunate that Dr. Craig had been able to follow this case up and see the benefits of treatment. He had one or two cases where the removal of adenoids had been followed by improvement in cases of epilepsy, but it was only a year after treatment that the improvement was noticed.

Dr. Shepherd thought that in true epilepsy a cure could not have been effected by this means and suggested that there was a hysterical element in the case reported.

Dr. Birkett said that Dr. Shepherd has just expressed his ideas on the point. He thought that one had to be very careful about regarding such a result as being the effect of the operation, especially in cases of this kind.

Dr. Deeks thought that perhaps the import of the paper had been misunderstood, that all had met with cases where a spur in the nasal passages or a condition of the throat had caused reflex conditions of this nature. He related a case of a young lady who had been under his care for undoubted epileptic attacks and she was very anæmic and covered with a bromide acne. Putting her on Blaud's pills had had the effect of improving her general condition and the fits had ceased. He thought that one often gave too much bromide in these cases.

Dr. Hamilton said he ought to confirm Dr. Deek's remarks as he had attended the patient during Dr. Decks' absence and might be reponsible for the bromide eruption. He also thought that sometimes we gave too much bromide.

Dr. Craig in reply said that some of the members who had so warmly criticised his paper, had not listened very closely to it, for at the outset he had stated distinctly that all cases of epilepsy were not caused by nasal spurs. His treatment had certainly been very effective as the patient had been able to return to his occupation. Dr. Craig believed that in this case the nasal obstruction had caused interference with respiration and consequent anæmic effects, and thought that in the present instance he had been perfectly justified in removing it.

DISCUSSION ON VACCINATION BEFORE THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

THE BACTERIOLOGY OF THE SKIN AND OF THE GLYCERINATED LYMPHS.

BY

JOHN McCRAE, B.A., M.B.

As is to be expected, there have been found on the skin bacteria of all sorts, many of them naturally the forms which would be got by exposing plates to the air in which the person lives. Most of these it will be understood are adhering temporarily to the skin, and but three or four varieties are commonly found in the skin layers, or deep in the openings of the sweat glands and hair follicles. The forms which are of surgical importance are staphylococcus epidermidis albus, (which is an attenuated staphylococcus pyogenes albus), bacillus pyocyaneus, B. coli communis ; the first named is the only one of these which has at all a widespread distribution.

Of all sorts and conditions, one observer has found 23 varieties of bacteria on the skin ; the practical bearing of this fact upon our subject is :—

1. What is the importance of these on the vaccinated surface ?
2. How may they be removed or destroyed ?

Most of these bacteria are washed off by the usual soap and water wash, with brushing or even rubbing with a soft cloth ; the perfunctory and momentary application of antiseptic solutions of moderate strength does not generally allow the antiseptic sufficient time to do its work. The average washing leaves the surface presumably sterile, but in the hair follicles and in the mouths of the sweat glands the bacteria have lain unharmed, the more so because in each gland or follicle a little cushion of air has kept the solution from entering it.

Next by means of the lancet or the ivory point the sterilized cuticle is scraped off, the mouths of the sweat glands included ; the buried bacteria can now come to light and remain in the serum which bathes the scraped surface. If the skin be sterile and the point not so, the same result is brought about. Most vaccination wounds are to some extent infected in one of these ways ; but the site being a clear, smooth surface, not in a fold of the skin, the injury being comparatively slight, and most important of all, the wound having perfect drainage, the infection is generally of no importance. But where on account of unsound reasoning, a scab is allowed to cover and protect the bacteria, and obstruct drainage of the wound, a considerable loss of tissue may occur, and the condition of local sepsis is sometimes allowed to continue because it is not recognized that a vaccination must be given treatment accorded to a similar lesion from any other source. There is, therefore, practical proof that the infections of the skin in vaccination are clinically and bacteriologically of little importance ; but it will be readily allowed that without due precaution some one of these bacterial birds of passage may in the thousandth case prove to be a very virulent bacterium ; and as in fabled history should the Snark turn out to be a Boojum, the most serious results may occur.

The removal of the bacteria of the skin is, on the plain surface, a matter of soap, water and friction ; for the sweat glands and hair follicles this is inadequate, and it is probable that the best results will be obtained by the use of absolute alcohol, which can replace the air in the cavities more readily than any other fluid, ether included. From its ability to mix with water, it will more readily make its way in all the interstices which are already moist with water previously applied, or with the water of the tissues.

The bacteriology of the glycerinated lymphs in general may be briefly stated as follows :—They are probably not of necessity sterile at the time of sealing ; in any tube a few weeks old, the pathogenic germs are found to have died out ; non-pathogenic germs may be present.

In 1898, specimens of glycerinated lymph were sent out by Professor Copeland and examined by Drs. Adami and Yates. Some were sterile ; the only bacterial forms found at all were B. mesentericus and Sarcina,—both normally inhabitants of the air and the soil.

Within the last three weeks I have examined bacteriologically samples of the glycerinated lymphs manufactured by three leading firms ; all proved sterile.

The points were examined in the same way, and of the samples used, (again three of the most prominent were selected), but one proved to be sterile. The other ones showed each a growth of a single bacillus, which was in each case, one of those frequently found in air. For obvious reasons the names of the manufacturers of these points are not stated ; from so little proof, an injustice would probably be done to one, and an inflated value given to another.

These observations do not prove, but merely point towards their conclusions ; viz., that glycerinated lymphs are bacteriologically the purer, (though not necessarily sterile), but that the points if they carry germs, are likely to carry only those that may light upon the wound from the air, which as causes of infection are generally of little moment.

INTRACUTANEOUS VACCINATION.

BY
A. MACKENZIE FORBES, M.D.,
Montreal Dispensary, Montreal.

Ever since Lister demonstrated the causes of suppuration the acquisition of perfect asepsis has been the desire of all whose duty it has been to perform even the most minor operation. As vaccination is probably, of all minor operations, that which is most commonly performed, a study of any means of performing this operation in a manner which will assure not only an aseptic operation but the post-operative retention of such desirable condition will be of interest. For an aseptic vaccination three conditions are necessary:—

(1) The vaccine used should contain no pyogenic micro-organisms.

(2) The seat of inoculation should be free from pus-producing organisms at the time of operation.

(3) The seat of inoculation should remain sterile until the vaccination has been successful.

With reference to No. 1. Vaccine, as all know, can be procured in a solution in glycerine hermetically sealed in capillary tubes. This is nearly if not absolutely sterile, both from its preparation and from the fact that it is retained in glycerine, which is an antiseptic. This point has been proven by experiments made by many observers amongst whom are members of the pathological departments of both the Montreal General and Royal Victoria Hospitals.

With reference to No. 2. The sterilization of the superficial surface of the skin is easily effected by means of soap and water, alcohol, ether, or even strong antiseptics, removed later by the use of sterile water.

With reference to No. 3. The third essential to an aseptic vaccination has been, and is still, the most difficult problem connected with such operation, and it is because of this difficulty that it is desirable to discuss the possibility of procuring such retention of post operative asepsis by the intracutaneous method of inoculation. This method aims at the placing of the vaccine used between the layers of the skin by means of a hypodermic needle.

Although vaccination by means of a hypodermic needle has always been considered theoretically sound, it has not been received with favour, as is seen by the words of J. H. Huddleston of New York in a recent article here quoted verbatim :—"The hypodermatic method is also objectionable on account of its uncertainty, on account of the greater care necessary with the instrument, and on account of the danger of injecting matter which may contain pyogenic bacteria." And again, to quote the same writer in a personal letter :—"Any method of vaccination which does not produce an eruption on the skin must be, in the present state of our knowledge, unreliable, because it is only by the appearance of the vesicle that we are able to say whether the vaccination has been successful or not. The hypodermatic method is also objectionable, it seems to me, because perfectly efficient virus, which is fit for use, may contain skin cocci, which may produce suppuration when injected beneath the skin."

If it is permissable to criticize these remarks it may be said :—First, with reference to the contention "that perfectly efficient virus may contain skin cocci, which may produce suppuration when injected beneath the skin." It has been proven that most hermetically sealed vaccine is at least almost sterile. To this may be added in proof of the statement, that over thirty such hypodermic injections of vaccine have been made without the slightest untoward effect, while it is certain that vaccination by the open method often leads to a false sense of security, inasmuch as it may induce a local staphylococcic or streptococcic infection, which is entirely distinct from true vaccination, and such result is not protective against smallpox.

Unfortunately the contention made by Huddleson, that any method which does not produce an eruption must be unreliable is only too true, and this is the reason why this method has been received with so little favour. Recently, however, Dr. W. O. Rose of Nelson, British Columbia, has suggested that this objection may be eliminated by the superficial injection of the lymph used, and it is to a record of cases vaccinated by this method, that your attention is directed. It may be advantageous, however, to consider briefly before discussing this recent method of vaccination, what can be considered a successful operation. Many believe that the formation of one or more vesicles, appearing usually between the fourth and tenth day at the place of inoculation, is all that is necessary to assure a successful vaccination, and if such be true, are we not justified in preventing further reaction, with the infection which so frequently accompanies such reaction, either by the use, after the open operation, of strong antiseptic applications on the exhibition of such phenomena or better, by the prophylaxis of such condition by the intracutaneous method of inoculation ?

Is it not possible that even if it be essential that a prolonged reaction from the vaccine should occur after the vesicular formation, such subsequent reinfection—and experiments seem to have proven that the pustular stage is that of a mixed infection—is deleterious to the further development of the toxines of the vaccine virus, and thus to the further and prolonged reaction due to the virus of vaccine ?

The methods used and the results obtained in thirty cases vaccinated by the intracutaneous were as follow :—

The patient's skin at the point of election being thoroughly sterilized, a previously boiled hypodermic needle is introduced and inserted under the upper layers of the epidermis so superficially that the blue colour of the steel needle is perfectly discernable for its whole course. This needle is thus introduced for a distance of one-half to three-quarters of an inch, and at this point the vaccine taken from one or two capillary tubes is instilled after previous dilution with a few drops of distilled water. This instillation is immediately followed by an area of ischæmia slightly smaller than a five-cent-piece, and simulating an urticarial wheal.

At this point it may be interesting to note that the insertion of the hypodermic needle intracutaneously, while causing more pain than subcutaneously, as it is usually employed, does not give rise to a greater sense of discomfort than the open method.

The weal-like area is followed within a few hours by a like inflammatory area, which, in all cases resolves into a papule within twelve hours. With regard to the papule ; it is notable that the injection in like manner of any irritant will cause a similar manifestation, as has been demonstrated by experiments made. A similar quantity of distilled water and glycerine has been injected intracutaneously. The reaction which followed was much milder, however, and was of shorter duration than that following the injection of the same quantity of a solution of vaccine in the same individual, and at the same time.

The papule formed by such injection of vaccine is hard and shotty, and is surrounded by an area of hyperæmia varying with the susceptibility of the patient. It is also the seat of slight irritability and pain, which seems to vary in proportion to the measure of success or failure of the vaccination. This papule in three or four days becomes surmounted by, or changed into, a vesicle, which has in the past been considered the only certain evidence of success. It is conceivable, however, that certain inoculations followed only by papules, which never reach the vesicular stage, (perhaps through the mildness of the reaction) may be quite sufficient to give immunity against variola.

This intracutaneous method has been tried in over thirty cases, with the following results :—In 29 cases previously vaccinated one or more times, 16 were considered successful, 7 unsuccessful and 6 were doubtful. In 3 cases who had never been vaccinated, 2 were successful and one was unsuccessful. This unsuccessful case was possibly due to some fault in technique.

These suggestions are presented in the hope that they may be of service to those who are desirous of vaccinating individuals who in the past have objected to the pain and reaction often following a successful vaccination by the open method.

Dr. F. W. Campbell :—My remarks with regard to vaccination will be perhaps more historical than scientific. It is perhaps only known to a very few medical men in Montreal, that nearly 50 years ago smallpox patients were admitted into the wards of the Montreal General Hospital. I will not say that it never extended to any persons who saw these patients, because I myself got it when a student, nearly 46 years ago ; the diphtheria patients were also admitted in the same way.

During the winter of 1862, the first by-law which compelled children to be vaccinated was put in force in the City of Montreal, and the late Dr. Leprohon, Ricard and myself were appointed public vaccinators. The East, West, Centre and St. Lawrence wards were visited and, including my public vaccinations and those in my private practice, 25,000 vaccinations and revaccinations were done. Now we have heard, and what we have heard we believe, that these arms of ours and the air which surrounds them, are in a very dangerous condition, but I want to say this, that I never washed any of those 25,000 arms, and I have never seen the slightest bad result in a single case. Now what was used ? I do not know that I ever saw a vaccine crust examined bacteriologically, but the ordinary scab was universally used by the profession of Montreal, and they were valuable because many a dollar have I made by selling them to the wholesale houses in the city. The way to catch these crusts was to attach a piece of net round the arm by a string, and when the crust fell off, it was thus saved. Twenty-five or thirty children could be vaccinated from this.

When you took the vaccination crust and held it up to the light you saw the central disc dark, dense and not transparent, the surrounding was semi-transparent. I invariably cut off the surrounding part, shaved this crust, mixed it with cold water and made a sort of paste, and with this smeared the tartan cut on the arm, as it was called. When it dried the baby went around with his arm exposed to the air and contamination.

Two marks I think are the number that have usually been made in this city, and on looking up the matter, I think we will find that the number of marks bears a relation to the percentage of deaths. A person who has had smallpox is not as well protected as those who have had three good vesicles. The deathrate among the unvaccinated, according to Seaton, who is the best authority in the world, is 35 per cent., among those said to be vaccinated but no mark found 23.57 per cent., with one mark 7.73 per cent., two marks, 7.70 per cent. three marks, 1.95 per cent. and 4 marks, 1.55 per cent. He gives the percentage of deaths of persons who had had smallpox and taken the disease a second time as 19 per cent. It is a singular fact that there are people who take smallpox more than once, medical men having to give up attending these patients on account of their susceptibility to the disease. Many assert that four marks should be given when an epidemic of the disease is threatened.

What is a good vesicle ? More than once, more than three times, I have made a house to house visit in the wards mentioned, and then made a statement at the Board of Health that 90 per cent. of the French population in this city were unprotected, that they did not possess a good mark. An ordinary smooth, irregular cicatrix is a bad mark ; a good one is one which is generally circular, but which shows that the vesicle is composed of a large number of depressions in the centre of this mark, perhaps 15 or 20.

What is vaccination ? I have thought a good deal of the subject and make the statement that there are several thousand instances on record where the matter from smallpox has been taken and introduced into the cow and brought back to the individual, and you have the very best vaccine which has been taken from the human family.

When should a person be vaccinated ?

Some say that a person should always be revaccinated at puberty, but no matter what the age it should be done when a smallpox epidemic is threatened. Is it a wise thing to rupture a vaccine vesicle during its progress ? We know that there is a system of vaccination which is called arm-to-arm vaccination, where children are brought on a certain day to be vaccinated from the arms of those done on a previous stated occasion, and from whom at a later period new children are vaccinated. Now a great many hold, and I feel inclined to agree with them, that it is a mistake to rupture a vesicle, that a certain amount of this matter does not go through the individual when the vesicle is ruptured, it should be allowed to go through its progress untampered with until the very end.

The next thing is what is the best method to prevent pitting in smallpox ? I do not propose to give my own views but something which has not been generally known. When I began the study of medicine I was an apprentice to Dr. James Crawford, Professor of Clinical Medicine, who advised the application of tincture of iodine. I have since, whenever I had a case of smallpox, used this with very satisfactory results. This was demonstrated in the *Medical Chronicle,* by Drs. Wright and Macallum, by taking a case that occurred among the Indians and painting one side of the face, while leaving the other unpainted ; the side which was painted was not pitted at all while the other was deeply marked.

DR PERRIGO :—There has been all through England and the United States, in the medical societies, a thorough discussion on vaccination, and if you read these discussions carefully you can see through all a latent feeling that the present method of vaccination is not wholly protective. We are supplied with vaccine by commercial houses and just now, particularly on this continent, they are taxed to their very utmost. Vesticles are drained, and I have no doubt are over-drained, to arm as many points as possible, and there is no Government inspection or control ; the great desire is to supply all the demands that are made, and often I am sure we do not get that which we demand.

In company with the late Dr. Ross and Dr. Kennedy, during the epidemic of 1885, we were deputed to visit an institution on Cathedral Street. In this institution we saw what was a perfect revelation. We saw 25 or 30 children in the different forms of septic infection, erysipelas, etc., from which some died—one of the most pitiable sights I ever saw. At that time there was intense opposition against vaccination, so much so that it resulted in riots. I do not think that the bacteria of the skin were any more virulent then, than now ; we vaccinated from the brown mahogany scab, from the lymph, from the vesicle, and from points. With the scab as with the points, which I purchased from the New England Institute, I always had a typical vaccination vesicle from my vaccinations, and I had very few sore arms, and at the same time there were no precautions whatever taken against sepsis. From what I have seen in my own practice we have very seldom a typical vesicle from the points we are now using, and I have had a great number of sore arms. I may say also that I have refused in some 15 or 20 cases to vaccinate at all ; once I broke this rule in a delicate infant, smallpox being near them : I was very careful about this case, treating the vaccination as a surgical operation in miniature, but I had an intensely sore arm. With the present vaccine points you have a very sore arm, a running sore, but do not get a typical vaccine vesicle. I think there are cases where we should not vaccinate unless there are cases of the disease in the neighbourhood. I do not want to decry the present method of points, but they are not always what they ought to be. As for supervision, in the United States, they say that this should not be under the control of the Federal Governments, but under the State, and we are almost in the same position here. There is nothing to prevent our Government from exercising proper supervision over commercial houses who undertake the sale or procuring of vaccine. It is a subject which should be taken up, and would be the means of giving the public more confidence..

Dr. Gurd :—My experience is very different, I have used the crusts in the big epidemic of 1885, and have had lots of experience with the different methods and preparations of vaccine-crusts, points, tubes containing humanized lymph, and the present glycerinated tubes. Long ago one expected to have a large percentage of primary takes, 50 per cent. would be considerd very good primary takes ; in the glycerinated lymph the failures have been nil, either in adults or children. One has to do quite a few adults for the first time, and these have taken admirably, such adults I think have a more severe arm, but there is a typical take. As to the first dressing I have tried everything.

The infants are generally washed and prepared for me so that I do not go to the trouble again of cleaning them, but immediately vaccinate with one mark, putting over this a piece of gutta percha tissue, ½ inch square, and a section of zinc oxide adhesive plaster right over this again. I have timed myself, and it takes just 30 seconds from the time you begin your scarifications. I use glycerinated lymph and a needle, as it is easily cleaned. I tell the person to take off the plaster next day, and by that time it is perefctly dry.

Dr. G. A. Brown had had a considerable experience in vaccination and for a number of years had used the points only. During the past winter he had, on account of the number of failures with the points, tried glycerinated lymph. With that form supplied on points, however, he had not had much better results, but with the tubes had found it rare to have a failure. In his experience, glycerinated lymph as supplied in the tubes had many advantages. The pocks produced were not so severe and one could scarify with a needle and make a much smaller scarification, causing very little pain.

As to what constituted a "take" he was satisfied when the person vaccinated experienced some feeling of being ill from the effect of it. He had had very little trouble with sore arms, having seen only one case, that of a medical student who had been vaccinated by a fellow student, and whose arm was inflamed from wrist to shoulder. This case he had treated as one would a cellulitis and with good result.

Concerning the question as to what were the contraindications for vaccination, he thought that in anæmic persons of low vitality it was a mistake to expose them to the possible risks of sepsis following vaccination.

DR. D. J. EVANS raised the question as to the number of marks necessary for proper protection.

DR. GIRDWOOD related his experience in 1849 as an apprentice in vaccinating the poor. No attempt was made at cleansing the skin previous to vaccinating and the method was entirely arm to arm. He did not remember having much trouble with sore arms. The usual practice in those days was to make three marks.

DR. G. G. CAMPBELL thought that what many of the speakers had said regarding the infrequency of sore arms before the days of antisepsis was in accord with what Dr. McCrae had stated in his paper, that the danger of infection from skin cocci was almost nil. The danger of arm to arm vaccination came from the possibility of conveying disease such as erysipelas and syphilis, through the lymph. Where one was absolutely certain of the state of health of the subject from whose arm the lymph was taken it was possibly the best method.

With respect to the question raised by Dr. Perrigo of governmental supervision of establishments supplying vaccine, the speaker did not think the danger of a poor product being put on the market was as great here as might at first sight appear. Vaccine was mostly prepared by the manufacturing pharmacists who also supplied us with drugs, and while it was a comparatively easy matter to test the efficacy of vaccine it was by no means easy to do so of drugs, such as ergot and digitalis, and yet these products were generally reliable, the firm manufacturing them having a reputation to keep up.

DR. MORROW, speaking of the conditions under which it was not advisable to vaccinate, related the case of a man who was just recovering from a poisoned finger when it became necessary to vaccinate him. The operation had been done on the other arm and no trouble followed. Dr. Morrow also related the history of mental disturbance coming on in a boy just at the time a vaccination sore reached its height, and lasting for six or eight months at least. He expressed his preference for glycerinated lymph as giving a much larger percentage of takes.

DR. MAUDE ABBOTT stated that she had examined a sample of glycerinated lymph in October last, and obtained cultures of staphylococcus epidermidis albus and bacillus mesentericus.

DR. HOWARD CHURCH drew attention to the point that in giving a certificate of vaccination many physicians used the words "successful vaccination" when the operation had just been performed and one was unable to tell whether it would take or not.

DR. FOLEY called attention to the many different forms of eruption which occasionally followed vaccination, and mentioned that he had seen a case of syphilis following vaccination.

Dr. Shepherd thought that the present eruption was remarkably free from these general eruptions. Syphilis, of course, could only come from humanized lymph and this was the principal reason why humanized lymph had been given up. He referred to the surgeon of St. Thomas's Hospital, who was so confident that syphilis could not be conveyed in that way that he had himself vaccinated from a person suffering from syphilis and thus contracted the disease. He held that the eruptions following vaccination were only precipitated by vaccination and not caused by it.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Cardic Hypertrophy and Dilatation.

THOMAS CLIFFORD ALLBUTT, M.D., LL.D., D.Sc., F.R.S. "Hypertrophy and Dilatation of the Heart." *The Practitioner, January, 1902.*

Valvular diseases and Bright's diseases are outside the subject included in the title of this paper, and while the two conditions of the heart thus designated above are commonly found together, dilatation may be found without hypertrophy, while hypertrophy is rarely ever found without dilatation, or without increase of capacity in either auricle or ventricle or in both. The insufficiency of the normal heart on excessive and protracted bodily exertion, since there is no conclusive proof that the walls of the normal heart are susceptible of strain under stress of muscular effort, such as to give the structure a new set, is accounted for by, (1) the accumulation of waste products, (2) the need of nutrition. As a safeguard preventing the heart from working itself to death, suffocation and exhaustion, thus induced, may be considered. While that incapacity which so often persists may be designated rather than explained as "nervous exhaustion," which has its source not in the quality of the heart muscle, but in some nervous disorder, that amount of dilatation found in such hearts is to be considered rather as the result of influence through the vagus or depressor nerve than as a molecular strain.

Dr. Allbutt reduces more and more the factor of blood pressures in cases of apparent heart strain, and attributes the symptoms in the cases described to intercurrent causes, syphilis, tobacco, tea, alcohol, and improper or insufficient diet.

The total mass of blood is a factor of much importance in the labour of the heart. With increase in the bulk of the blood, especially in those engaged in active and often heavy work, the heart has more work to do, and the left ventricle dilates and hypertrophies. Many subjects of this increase in the total bulk of the blood, which induces with the increased work both the capacity and size of the heart, are beer drinkers, and the muscle of the heart is one *poisoned by alcohol*—a degenerative change of toxic origin.

Dr. Allbutt further states that there is but little evidence that a heart duly hypertrophied and dilated will degenerate, unless its muscle be poisoned or be the seat of some more intrinsic degeneration, or be submitted, as in valvular diseases, to stresses increasing beyond its possible resources.

Again dilatation and hypertrophy of the heart result in the middle aged and elderly from increased peripheral resistance or from arterial disease. The writer holds that degenerative disease does, no doubt, invade the heart and arteries as a system, but the cardiac changes are conservative, and often it is only after the heart can no longer strive, that stretched and spoiled degenerative changes occur in it, and finally death ensues. Arterial blood pressure is by no means constantly increased with arterial disease. Many modifying factors may enter to explain this rather unexpected condition, *e g.*, a wider arterial bed, less velocity, less friction, or localized degenerative changes, or diminished blood mass.

J. Burney Yeo, M.D., F.R.C.P. "The Treatment of Cardiac Dilatation and Asthenia." *Ibid.*

In approaching the subject of the treatment of such conditions as are above designated, the more recent causes are considered. Dr. Burney Yeo finds that dilated hearts have been more common since we "fell under the sway of the 'influenza fiend.'" In addition, "the growth of the cycling and golfing crazes and the general cult of excessive muscular exercise," must be considered, and as a contributory influence in the production of cardiac dilatation and asthenia, "the excessive use of tobacco," should be mentioned. The necessity of a "prolonged period of physical rest" after an attack of influenza is emphasized. Baths, in the experience of the writer, are of far more value in chronic cases of cardiac dilatation than "resisted exercises."

Richard Caton, M.D., F.R.C.P. "Cardiac Dilatation and Hypertrophy." *Ibid.*

This article deals in a general way with the etiology of such conditions including myocardial and endocardial changes as factors productive of dilatation and compensatory hypertrophy. Under treatment, it contains a brief discussion of the Oertel and Schott methods, and here the writer points out that, while the principles of the Oertel treatment have long been prescribed by British physicians, those of the Schott system are more original. A warning note is sounded against routine in the application of these systems. Each cardiac case must be treated after its own peculiarities.

Arthur Farwell, M.D., F.R.C.P. "Points in the Prognosis and Treatment of Hypertrophied and Dilated Hearts." *Ibid.*

The remarks contained in this paper apply to conditions found in adults of thirty years and over, when the period of development is at an end. After pointing out the necessity of most tactful dealing with all patients afflicted with heart disease, Farwell passes on to show that if rheumatic valvulitis have arisen late on in life, forty and upwards, when the power of producing hypertrophic growth of the heart muscle is small, the outlook is naturally much gloomier, and only in those where the lesion is small can the complete compensation be expected.

"Of large hearts produced by rheumatic valvulitis those suffering from mitral regurgitation have, no doubt, the best future.... Aortic regurgitation next, then mitral stenosis, double mitral, double aortic, and worst, so far as one has a right to judge so rarely occurring a lesion, uncomplicated tricuspid disease." "Enlargments of the heart due to lesions of the pericardium are of far less hopeful outlook." It would appear that pericardial disease was grave because of the fact that such pericardia no longer act as supporting structures, and all sudden strains upon the heart muscle must needs be borne unsupported. In the author's opinion, universal pericardial adhesions are not so dangerous.

Cases of cardiac enlargement not due to pericarditis or endocarditis are myocardial in origin, and may be classified into, (*a*) where the myocardial disease is primary and, (*b*) where it is secondary and due to either arterio-sclerosis or nephritis. Those found in the arteriosclerotic group have the best prognosis, while the prognosis in the nephritis group is that of nephritis, the patients usually dying of uræmic symptoms. In the first or primary myocardial cases, "prognosis is almost impossible." In these cases the writer remarks that "it is more a quiet settling down to sleep than the agonized warfare of failing hearts." The patient is the sport of external circumstances and any slight shock may cut the thread of life.

Treatment.—All chronic heart sufferers are most prone to be introspective, and such patients have most troublesomely retentive memories, and moreover, pertinaciously seek a full explanation of any dictum not quite clear to them. "In meeting such," Dr. Farwell suggests, "the best way is to tell the truth, but not the whole truth." "What the physician needs is to gain the confidence of, and some parental control over his patient, so that he may be able to pass by some questions and refuse some explanations without causing distrust or a sense of slight." Safety for the physician lies in two things:— "the constant practice of logical accuracy, and a careful consensus of language."

One great reason why those who have survived a cardiac damage acquired in childhood, bear it so well throughout adult life, is because long before they reach the introspective age it has become a part of themselves, and therefore no more a thing to be pondered over. The patient must not only be got to live down to the strength of his heart, but at the same time to live up to it. This implies regulation of work in short spells of two hours each with periods for rest and meals between. The food may with advantage be taken five times in the day, and usually be eaten dry.

Massage, baths and resisted movements possess in selected cases great advantages. The tepid saline bath is a far more powerful therapeutic measure than resisted movements.

Dr. Farwell outlines his treatment of a serious case of heart disease when the patient is completely confined to bed. Massage is begun, fifteen minutes effleurage once daily. This is gradually increased to one hour's vigorous massage, chiefly kneading, twice daily. Then, instead of the evening massage, resisted movements are employed at first for five minutes, later for half an hour, and finally the massage is replaced by two half-hours of resisted movements. And as soon as this is well borne the patient is allowed to sit up out of bed for half an hour in the evening. This is gradually increased to two hours, with a little walking about the room. As the time for being out of bed in the morning grows longer, the need for the resisted movements grows less, a return to massage at that time proves the better treatment. Gradually the improvement admits of the return to ordinary avocations. One great advantage of such a course of treatment is its discipline.

Strychnine and bromide are far better than digitalis or strophanthus in cases of rapidity and irregularity without valvular lesions.

Eustace Smith, M.D., F.R.C.P. "Dilatation of the Heart in Children." *Ibid.*

This condition is common in early life. The heart in childhood is said to dilate with exceptional ease. When this complication arises early in acute rheumatism it may be mistaken in signs and symptoms for pericarditis with effusion. In acute illness, when dilatation is rapid and may be extreme, there is marked increase in the dull area, the apex is feeble and diffuse, the first sound is faint at the apex, the second sound is accentuated at both aortic and pulmonary orifices. (Lees). Some degeneration of the cardiac muscle is the rule in all these cases of dilatation. The degeneration of the myocardium is carried to a greater degree in diphtheria and influenza than in rheumatism. (Poynton).

Vomiting accentuates the gravity in prognosis of other signs of cardiac dilatation, the importance, therefore, of careful observation of the heart in such diseases is apparent, and the food and muscular movements should be carefully regulated, lest a degenerated heart muscle be overwrought. In rheumatic cases the salicylate of soda may be combined with five or ten grains of ammonio-citrate of iron to counteract the lowering effect of the soda salt. Iron and strychnine afford the chief resource, and the perchloride of iron given with solution of strychnine in full doses, well diluted with an aërated water, has seemed to be followed by the best results. Alcohol must not be forgotten.

A. E. SANSOM, M.D., F.R.C.P. "On Hypertrophied and Dilated Hearts as Studied and Treated in Recent Times." *Ibid.*

DR. SANSOM does not agree that hypertrophy of the heart muscle or dilatation of its chambers must be in all cases of the nature of disease. There is such a thing as athletic hypertrophy. Dilatation of the left ventricle is not always a bad thing. There is good ground to believe that the bulk of the heart varies somewhat at different periods of the day and night. The rôle of lesions of the nervous system in the pathogenesis of hypertrophy and dilatation of the heart is of much importance, and recently, it would appear, this factor is more potent than heretofore. To influenza and the disturbing influence of the war in South Africa are ascribed the modifying influences in these cardiac conditions.

Throughout the greater portion of this instructive article, Sansom lays much stress upon the part played by the nervous system, and insists upon the examination of a patient being undertaken and conducted in such a way as to avoid all chance of unduly exciting the patient, and thus being led astray in our conclusions. Irreglarity of the pulse does not indicate structural disease of the muscle of the heart, but a disorder of the nervous mechanism of the cardiac reflex.

The disturbance of rate and rhythm of the heart are especially likely to occur in the subjects of osteo-arthritis. The subjects of influenza are often liable to such attacks as well as those whose history shows a sudden or severe strain of the emotional or nervous system. Dr. Sansom holds that in all these cases some alteration has occurred in the nervous mechanism of the cardiac reflex, and since there is not that relation between degree of disturbance and degree of dilatation which some have averred, it would appear that for the production of dilatation there must be some effect upon the trophic nervous mechanism, and not only upon that portion which regulates rate and rhythm.

In the treatment of these cases "the policy of coddling has given place to the policy of training" and there is no doubt that after all errors are eliminated, "massage, baths, exercises, and pleasant air cures, have done much good."

The medical treatment which best suits such dilated and hypertrophied hearts is not digitalis but alkaline bicarbonates with bromides, phenacetin, antipyrine, and in some cases hypodermic injections of morphine. Cod liver oil, some arterial relaxant, and careful dieting, often produce good results in those cases where arterio-sclerosis is the condition which is associated with forcible ventricular action, inadequate renal functions, urine of low specific gravity and albuminous.

W. F. Hamilton.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER,

Sympathetic Ophthalmia.

GASPARRINI. "Researches in Sympathetic Ophthalmia." *Annali di Ottalmologia, XXX., 4.*

DE WECKER. "Extra-ocular Complications of Sympathetic Opthalmia." *Annales d'Oculistique, Oct., 1901.*

Gasparrini found that after inoculating attenuated cultures of the diphtheria bacillus in one eye of a rabbit, symptoms developed in the other eye similar to sympathetic ophthalmia in many. Later investigations of two clinical cases have convinced him that the sympathetic disease is due to toxines evolved by the bacteria, rather than to the bacteria themselves. The toxines are conveyed along the sheath of the optic nerve, setting up an inflammation of the optic nerve and also probably of the ciliary nerves.

The toxicity of the urine in these two cases increased as the sympathetic inflammation reached a maximum, and diminished as the eye symptoms improved, thus differing from those cases of neuritis of renal or cardiac origin. In the latter form of neuritis the toxic products accumulate from deficient elimination by the kidneys, the intoxication being general ; whereas in the former the neuritis is due to local infection and the toxic products are promptly eliminated by the kidneys.

De Wecker cites a series of cases, including one of his own, in which sympathetic ophthalmia was complicated by the sudden development of nerve deafness. The deafness attacks both sides with equal intensity, irrespective of the eye first attacked. It is associated thus also with parenchymatous nephritis. The possible explanation is that the deafness is the result of a migration of micro-organisms along the optic nerves to the auditory nerves, producing changes similar to those produced in the eye.

Corneal Lesions.

PERRIN. "Intra ocular Injections in Suppurative Keratitis, Hypopyon Iritis, and Irido-Choroiditis." *Recueil d'Ophthalmologie, Sept., 1901.*

PFLUGER. "Subconjunctival Injections of Hetol." *Klin. Monatsbl. f. Augenheilkunde, Sept., Oct., 1901.*

Masugi. "(Japan) Action of Cocaine on the Healing Process of Corneal Wounds." *Ibid., Aug., Sept., Oct., 1901.*

Maynard, Surgeon-Major. "Ophthalmic Complications of Plague." *Indian Medical Gazette.*

Kalt, J. "(Paris) Corneal Lesions secondary to Neuralgia of the Fifth Nerve." *Annales d'Oculistique, Oct., 1901.*

Hohn, J. "Corneal Lesion after Extirpation of Gasserian Ganglion."

Perrin advises the intraocular injection of one in five thousand solution of cyanide of mercury in cases of suppurative keratitis, hypopyon iritis and irido-choroiditis. He injects one or two drops into the anterior chamber by means of a hypodermic needle, inserting the needle at first at the corneal margin in front of the iris. The treatment is as useful in streptococcus and pneumococcus as in staphylococcus infection.

In cases of herpes corneæ, keratitis dendritica, deep ulcer of cornea, and in various forms of uveitis, Pfluger injects half a cubic centigramme of a one per cent. solution of hetol. The success has been most marked in all these chronic lesions. Pfluger has more recently tried it in cases of parenchymatous keratitis and relapsing scleritis.

Masugi states that cocaine muriate occasions alteration in the corneal cells, interfering with karickesis by extracting water from the cell substance, and possibly by a special toxic ,effect. It thus certainly interferes with the healing of a corneal wound.

Kalt mentions the well-known fact that lesions of the ganglion of Gasser are followed by ulcerations of the cornea, and lesions of the fifth nerve beyond the ganglion occasion anæsthesia. Baudry mentions a case of ulcer of the cornea complicating neuralgia of the fifth nerve. Kalt holds that lesions of the cornea short of ulceration are associated with fifth neuralgia, and cites a case of his own of middle interstitial trouble resembling the onset of the ordinary neurokeratitis. He also mentions another case with detached retina in the one eye and peripheral chorioretinitis in the other.

Hohn reports the case of a woman from whom the Gasserian ganglion had been removed and who persisted in working on a farm in all weathers. The cornea was anæsthetic at once, and in two weeks a hypopyon keratitis developed, with one large ulcer and one or two small spots of ulceration.

Surgeon-Major Maynard mentions twelve cases of plague with ocular complications. The lesions were hazy and sloughing cornea, iritis of varying types and severity, scleral and ciliary staphyloma.

Hemeralopia.

Trantes. "Treatment of Essential Hemeralopia by the Injection of Cooked Liver." *Archives d'Ophthalmologie, Nov., 1901.*

Trantes has cured forty cases of essential hemeralopia by feeding with boiled or roasted sheep's liver, and of these cases twenty-four occurred as an epidemic, with associated xerosis of the conjunctiva. Cure resulted in from twenty-four to forty-eight hours except in one case, which required six days treatment. Even chronic cases of years standing were successfully treated after other means had failed.

Thre or four meals of two hundred grammes of liver each were given as a rule, and in order to prevent recurrence, liver was given at intervals. One case associated with chronic hepatic affection, and one with the cachexia of gastric sarcoma, were improved as regards the eye-symptoms.

Jequirty.

Lapersonne. "Researches in regard to the action of jequirity." *La Clinique Ophthalmologique, Dec. 10., 1901.*

After applications of jequirity to the eye there is enormous leucocytic infiltration with transudation of serofibrinous fluid. There is also leucocytic thrombosis of the small veins of the conjunctiva and cornea, this explaining the rapid disappearance of the pannus.

Lapersonne further holds that Merck's carbolized abrin is unreliable, and prefers using a fresh one-in-twenty infusion of the bean applied with a swab. The antiabrin serum is of but little service, as it will only control the action of the jequirity when applied within forty-eight hours of the application of the jequirity, and it is only after this that the dangerous action of the jequirity develops.

Xanthona.

Leviseur. "Treatment of xanthoma of the eyelids." *Med. Record, Dec. 7, 1902.*

In small superficial patches incision suffices to effect a cure, but in large and deep patches excision may be followed by ectropion of the eyelid, and here Leviseur uses electrolysis. Introducing the needle horizontally under the skin, a mild current is used, gradually increasing to two or three milliamperes, and lasting thirty seconds, repeating in the larger patches for two or three separate sittings. A light powder is dusted over, and in two days a light firm scab forms, which may take some time to drop off. The parts treated should not during this interval be rubbed or washed.

Sarcoma of the Optic Nerve Sheath.

F. Antill Pockley. "(Sydney N. S. W.) Removal of Neoplasm of Optic Nerve Sheath by means of Kronlein's Operation, with Retention of Eye and Good Vision." *Australian Medical Gazette, 1901.*

The patient was a healthy boy aged thirteen, suffering from proptosis which had been gradually increasing for six or eight months. The left eye projected three-eighths of an inch in front of its fellow, but was freely moveable ; tension was normal, pupil active, and vision 5/12. On deep pressure with the finger at the lower outer angle of the orbit a sensation of resistance could be made out. Diagnosis was made of a tumour within the muscle cone, probably attached to the optic nerve but not implicating it.

Kronlein's operation was performed, when a tumour was found attached to the optic nerve sheath for about three-quarters of an inch. No division of the muscles was necessary and the tumour was easily stripped off the sheath. The tumour was found to be an encapsulated round-celled sarcoma. After replacing the bone and closing the wound, the eye went back into position and retained its movements as before.

J. W. Stirling.

Reviews and Notices of Books.

RHINOLOGY, LARYNGOLOGY AND OTOLOGY AND THEIR SIGNIFICANCE IN GENERAL MEDICINE. By E. P. FRIEDRICH, M.D., Privatdocent at the University of Leipzig. Authorized Translation from the German. Edited by H. Holbrook Curtis, M.D. Philadelphia and London. W. B. Saunders & Co., 1900.

"In these days of specialism there is a laudable tendency to unite the daughter to the mother of science. On every hand we see the publication of works destined to show the correlation between various branches of medicine and to awaken the interest of representatives of the various specialties for one another's work by defining the lines where their respective provinces meet. The present book belongs to this category and the author's object has been to point out the interdependence between disease of the entire organism and disease of the nose, pharynx or larynx."

Thus the writer in a few words explains the reasons for producing his work and also explains its scope. The book is extremely interesting, well written, and also up to date. The section on the nervous affections of the larynx is especially able.

The profession is under a debt of gratitude in placing this work within reach of those not conversant with the German language. We strongly recommend its perusal not only by those especially interested in these branches of medicine, but to the profession in general.

H. S. B.

LARYNGEAL PHTHISIS OR CONSUMPTION OF THE THROAT. By RICHARD LAKE, F.R.C.S. With Thirty-six Illustrations, Thirty-one of which are coloured. Philadelphia. P. Blakiston's Son & Co., 1901.

The object the writer has in presenting this small work to the profession is to bring before us the exact status at the present time of the subject under consideration as regards the pathology, prognosis and treatment. The conclusions formed are based upon the very careful consideration of over three hundred cases, coming under the writer's observation at the North London Hospital for Consumption. A series of illustrative cases is included, among which are several reported cured. Appended is a number of prescriptions found of value to the writer in his treatment of these cases. The illustrations, many of which are coloured, accompanying the text are well executed, and add materially to the value of the work.

H. S. B.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. VIII., Nos. 3 to 9. Pages 155 to 552.

This volume contains studies on typhoid fever and is a mine of information. Among the more important topics presented are :—The Surgical Treatment of Perforating Typhoid Ulcer, by John M. Finnie, and Laparotomy for Intestinal Perforation, by Harvey W. Cushing ; on Hæmorrhagic Typhoid Fever, by L. P. Hamburger ; Unusual forms of Infection with the Typhoid Bacillus, with special reference to Typhoid Fever without Intestinal Lesions, by Simon Flexner; Gall-Bladder Complications of Typhoid Fever, by C. N. Carnac ; Hepatic Complications of Typhoid Fever, by William Osler ; a Study of the Widal Reaction, in 265 cases of Typhoid Fever, by Norman B. Gywn ; Analysis and General Summary of the cases, from 1889 to 1899, by William Osler ; Special Features, Symptoms and Complications, by William Osler ; and Observations on the Blood in Typhoid Fever, by W. S. Thayer.

While the majority of the articles enumerated, deal with the statistics compiled from the records of a single hospital, and the detail is so overwhelming as to make a critical summary almost impossible, yet in many instances a comparison is made with observations in other countries, and the exceedingly full bibliography appended to many of the sections, makes the whole series invaluable as a work of reference. It is indeed a monument to the industry of the staff of the hospital.

AMERICAN EDITION OF NOTHNAGEL'S ENCYCLOPEDIA. Vol. 1, Typhoid and Typhus Fever. By DR. H. CURSCHMANN of Leipzig. Edited, with additions, by WILLIAM OSLER, M.D., Professor of of the Principles and Practice of Medicine, Johns Hopkins' University. Pages 646. W. B. Saunders & Co., 1901. Canadian Agents, J. A. Carveth & Co. Cloth, $5.00 net.

No apology is needed in introducing this latest addition to the already voluminous literature of the continued fevers. As remarked by the editor in his preface—" the original edition is recognzied by all special students of typhoid fever as the standard authority on the subject," and one might add that the standard has undoubtedly been raised by the judicious incorporation into the text of the many important advances in our knowledge contributed by American authorities. Among these may be specially mentioned the bringing up to date of the bacteriology of typhoid fever, additions to the chapter on pathology with regard to the extra-intestinal lesions, and a full consideration of the blood in the diseases.

The chapter on perforation and peritonitis has been enriched by the addition of the experience of American surgeons, and the section on the hepatic complications has been likewise extended. In the chapter on diagnosis, the principle additions are in regard to the bacteriological diagnosis of blood cultures and the detection of typhoid bacilli in the urine. In the chapter on prophylaxis, a note on anti-typhoid vaccination has been added. The chapter on treatment is extremely judicious, though short compared with the space allotted the symptomatology. Its value, might, we think, have been enchanced by a fuller statement of the methods employed in the different clinics of America, and especially by the addition of the convincing statistics of hydrotherapy.

The remaining portion of the work (pp. 475 to 628) is devoted to Typhus Fever. There are two excellent coloured plates of the rashes of typhoid and typhus fevers, and a number of charts illustrating the various forms of temperature curves in both diseases.

A carefully selected bibliography, dealing chiefly with epidemiology, and a carefully compiled index complete the volume. As a work of reference embracing every point of interest, this publication is indispensable to anyone who wishes to have an adequate knowledge of typhoid fever.

ANATOMY DESCRIPTIVE AND SURGICAL. By HENRY GRAY, F.R.S., Edited by PICKERING PICK, F.R.C.S., and ROBERT HOWDEN, M.A., M.B., C.M. Revised American from the 15th English Edition, with 780 Illustrations, many of which are new ; 1,272 pages. Lea Bro. & Co., Philadelphia and New York, 1901.

The continued popularity of this work is creditable alike to the name of the author, and to the work of his successors who have supervised all recent editions and kept the student world supplied with the very best and latest in the study of anatomy. The English Edition from which this one is taken has been thoroughly revised. The section on Embryology is amplified and made more intelligible by the introduction of some 60 additional illustrations, many of which are coloured and of very neat appearance. Throughout the work a number of diagrams have been redrawn and some new illustrations added.

This last edition differs from previous ones in having returned to the older method of introducing the subject of Anatomy, by discussing first the bony skeleton ; Histology and Embryology coming in at the end of the work, an arrangement which we believe will commend itself to the sense of fitness with most readers. The volume is a very handsome one and admirably printed.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

THOS. G. RODDICK, JAMES STEWART,
A. D. BLACKADER, J. GEORGE ADAMI,
GEO. E. ARMSTRONG, G. GORDON CAMPBELL,
WILLIAM GARDNER, FRANK BULLER,
F. G. FINLEY, H. A. LAFLEUR,

WITH THE COLLABORATION OF

WYATT JOHNSTON, T. J. W. BURGESS, H. S. BIRKETT,
C. F. MARTIN, J. W. STIRLING, KENNETH CAMERON,
J. M. ELDER, F. A. L. LOCKHART, C. W. WILSON,
D. J. EVANS, W. F. HAMILTON, A. G. NICHOLLS,
A. E. GARROW, E. J. SEMPLE, W. W. CHIPMAN.

VOL. XXXI. APRIL, 1902. NO. 4.

AGAINST TUBERCULOSIS.

It will be known to our readers that Dr. Knopf of New York has, through his writings, attained world-wide reputation. His Paris thesis upon sanatoria for consumptives, their mode of construction, their methods and results, immediately attracted attention ; and, expanded somewhat and translated into English and other languages, is regarded as the authoritative work upon the subject. Another essay of his secured an important international prize offered for the best account of tuberculosis, its cure, prevention and treatment ; and so admirably has it fulfilled the needs of the case, that already, in a few months, it has been translated into fourteen languages, the last, we hear, being Hebrew, and that for the benefit of Jewish immigrants in New York, London, and other great centres, who, in their ignorance and fanaticism, pay no attention to writings and ordinances in the language of the country of their adoption, but hail anything in Hebrew as the written word.

The address recently delivered at Ottawa before the Canadian Association for the Prevention of Tuberculosis, published in this number, explains how it is that Dr. Knopf has so swiftly attained the position of a recognized leader in the campaign against tuberculosis. The sure knowledge of his subject, command of a clear simple style, an apostolic enthusiasm, combined with a common-sensible appreciation of what is practicable and what are the limits of possible and immediate advance, form a combination that is bound to secure attention.

We are delighted to have the opportunity to publish the address, not merely because it will afford our readers an insight into the state of the combat against tuberculosis here and in Europe, but in the hope that, passing from our pages into the lay press, it will kindle a widespread interest in the work of arresting the spread of consumption and tuberculous diseases.

For let it be clearly understood that this crusade against tuberculosis cannot be conducted purely through the pages of medical journals, or by our profession alone. We can accomplish nothing without the cordial co-operation of the laity ; indeed it is the laity which must move in this matter, we, at most, advising and directing. It is through the daily press that most can be accomplished to secure the needed popular appreciation of what tuberculosis means to the country, and the action necessary to reduce its ravages. The crusade, that is, must be a popular crusade, yet it must inevitably be influenced and guided by our profession.

Now we know that both in the old country and here the participation of medical men in a popular movement has been meet with a certain amount of disapproval and ill-concealed opposition. Not a few members of our profession hold that it is against the ethics of our body to take a public part in the discussion of medical matters. But surely this is a mean and narrow view to take in the present case. Over and above, nay dominating and determining our code of ethics, is the higher spirit or ideal of our profession, to do whatsoever will lessen suffering and sickness and will add to the health and happiness of mankind. And obviously, we can best accomplish this in connection with tuberculosis by stimulating the public recognition and knowledge of what consumption means to the community, how each one by his mode of life can lessen its dangers, and how the community as a whole can help in reducing the misery of those afflicted, and can gain for those not afflicted safety from contagion.

Thus, under the circumstances, it is clearly the duty of medical men throughout Canada to associate themselves with the Association for the Prevention of Tuberculosis, for if they as a body whole-heartedly help in the good work inaugurated by it, if, that is, it be made a matter of common professional interest, then there can be no ground for anyone to suggest, as some of narrowed horizon and no charity have suggested, that membership indicates a desire for personal advertisement and advancement. What is taken up by the profession as a body cannot be so construed, while, in addition, a majority of medical men, interesting themselves in the affairs of the Association, will ensure that everything accomplished by it will be along the right lines.

Politically and municipally speaking the individual physician has curiously little influence ; combined as a body with the most broad minded laymen of the country (who indeed in this matter must depend upon our support and counsel), we can bring so strong an influence to bear upon public opinion, upon municipal provincial and federal authorities, as to remove from Canada the reproach of being far behind Germany, France and England in our care and provision for the improvement of the public health. What is the use of our priding ourselves upon being more advanced and more eager to advance than the peoples of the old world, if, as a fact, we are far behind them in such vital matters ?

CANADIAN MEDICAL ASSOCIATION.

The annual meeting of the Canadian Medical Association will be held in Montreal on the 16th, 17th and 18th days of September, 1902. The President is Dr. Francis J. Shepherd, 152 Mansfield St., Montreal, the Local Secretary, Dr. C. F. Martin, 33 Durocher St., Montreal, and the General Secretary, Dr. George Elliott, 129 John St., Toronto. Dr. William Osler, Professor of Medicine in Johns Hopkins University, will deliver the address in Medicine and Dr. John Stewart, Halifax, Nova Scotia, the Address in Surgery. Arrangements are already well in hand for a very large meeting.

Dr. John Stuart of Halifax has been appointed Secretary of the Medical Society of Nova Scotia in succession to the late Dr. W. S. Muir.

Drs. C. F. Wylde and F. B. Jones have been appointed Demonstrators in Clinical Microscopy in the Faculty of Medicine, McGill University.

Surgeon Lieut.-Col. F. W. Campbell of Montreal, after forty-three years service in the Canadian Militia, has received the "officers" long service decoration.

The Library of the Medical Faculty of McGill University is now open every evening from 7 to 10 p.m. except Saturdays. It is hoped that this arrangement will enable many members of the profession who cannot spare the time in the afternoons, to make use of the library.

Dr. David Shirres, Clinical Assistant in Neurology to the Royal Victoria Hospital, has been appointed Professor of Nervous Diseases in the University of Vermont. Dr. Shirres will still reside in Montreal, visiting Burlington during each winter term for the purpose of delivering a course of lectures upon his subject.

The Committee on Pathologic Exhibit for the American Medical Association is anxious to secure materials for the coming session at Saratoga, June 10th to 13th, inclusive.

This exhibit was accorded much praise and comment during the sessions at Atlantic City and St. Paul respectively, where were collected valuable exhibits from all parts of the country. The materials included not only pathologic specimens but the allied fields, bacteriology, hæmatology, physiology and biology were well represented.

It would also be desirable to secure exhibits of new apparatus, charts, etc., used by teachers of pathology and physiology in Medical Colleges.

This exhibit has already become a permanent feature of the annual sessions of the American Medical Association and the Committee is desirous of securing its list of exhibits as early as possible, and to this end asks those having desirable materials to communicate with any member of the Committee.

To contribute to the value of the work, it is suggested that as far as possible each contributor select materials illustrative of one classification, and by such specialization enhance the usefulness of the display.

Those lending their materials may feel assured that good care will be given their exhibits while in the hands of the Committee, and due credit will be given in the published reports.

Very respectfully,

F. M. Jeffries, 214 E. 34th St., N.Y. City.
W. A. Evans, 103 State St., Suite 1403, Chicago, Ill.
Roger G. Perkins, West. Res. Med. School, Cleveland, O.
Committee on Pathologic Exhibit, American Medical Association.

The Fourteenth International Medical Congress will be opened in Madrid, Spain, on April 23rd, 1903, and close on the 30th of the same month.

Dr. Abraham Jacobi, having been requested by the officers of the

Congress to form the American Committee, has arranged that the plan devised by Dr. William Osler, which worked so well in preparation for the Thirteenth Congress, shall be followed also for the Fourteenth.

Invitations to accept places on the Committee have therefore been sent to the President of the American Congress of Physicians and Surgeons, the President of the American Medical Association, the presidents of the fourteen constituent societies and associations of the American Congress, the Surgeons-General of the Army, Navy and Marine Hospital Service, the President of the Canadian Medical Association and the President of the National Dental Association. Acceptances have been received from nearly all of those invited.

Dr. Howard A. Kelly of Johns Hopkins University will deliver the address at one of the general meetings of the Congress, and has chosen for his subject "The passing of a Specialty."

Dr. Ramon Guiteras has been appointed delegate to the Congress by the New York Academy of Medicine.

The Committee to date consists of W. W. Keen, M.D., of Philadelphia, President of the American Congress of Physicians and Surgeons ; John C. Wyeth, M.D., of New York, President of the American Medical Association ; R. H. Chittenden, M.D., of New Haven, President of the American Physiological Society ; Walter S. Christopher, M.D., of Chicago, President of the American Pediatric Society ; Joseph Collins, M.D., of New York, President of the American Neurological Association; John W. Farlow, M.D., of Boston, President of the American Laryngological Association; Samuel A. Fisk, M.D., of Denver, President of the American Climatological Asociation ; S. C. Gordon, M.D., of Portland, Me., President of the American Gynæcological Society; Geo. T. Jackson, M.D., of New York, President of the American Dermatological Association ; Horace G. Miller, M.D., of Providence, President of the American Otological Society ; Presley M. Rixey, M.D., of Washington, Surgeon-General of the Navy ; F. J. Shepherd, M.D., of Montreal, President of the Canadian Medical Association ; George M. Sternberg, M.D., of Washington, Surgeon-General of the Army ; O. F. Wadsworth, M.D., of Boston, President of the American Ophthalnological Society; DeForest Willard, M.D., of Philadelphia, President of the American Surgical Association; H. August Wilson, M.D., of Philadelphia, President of the American Orthopedic Association; James C. Wilson, M.D., of Philadelphia, President of the Association of American Physicians ; Walter Wyman, M.D., of Washington, Surgeon-General of the Marine Hospital Service ; Abraham Jacobi, M.D., of New York, Chairman.

John H. Huddleston, M.D., Secretary,
126 West 85th St., New York City.

NEW BOOKS, ETC., RECEIVED AND NOTED.

P. Blakiston, Son & Co., Philadelphia.

System of Physiologic Therapeutics—Cohen. Vols. III. and IV. Climatology and Health Resorts. Weber and Hinsdale. 1901.

A Laboratory Guide to the Study of Qualitative Analysis. By E. H. S. Bailey and Hamilton Cady. Fourth Edition, 1901. $1.25 net.

William J. Doran, Philadelphia.

Transactions of the American Surgical Association. Volume the Nineteenth. Edited by Richard H. Harte, M.D. 1901.

Lea Brothers & Co., Philadelphia and New York.

Lea's Pocket Series. Venereal Diseases. By James R. Hayden, M.D. Third and Revised Edition. 1901.

J. B. Lippincott Company, Philadelphia.

International Clinics. Eleventh Series. 1901. Vols. I., II. and III. Edited by Henry W. Cattell, A.M., M.D.

Macmillan & Co., Limited, London. The Macmillan Company, New York.

The Healing of Nerves. By Charles A. Ballance, M.S., F.R.C.S., and Purves Stewart, M.A., M.D., M.R.C.P. 1901.

The Year Book Publishers, Chicago.

The Practical Medicine Series of Year Books, comprising ten volumes on the year's progress. Issued monthly. Under the general editorial charge of Gustavus P. Head. Vol. I., General Medicine. By Frank Billings. October, 1901. Vol. II., General Surgery. Nov., 1901. Edited by John B. Murphy, M.D.

W. B. Saunders & Co., Philadelphia, New York and London.

American Edition of Nothnagel's Encyclopædia. Variola, Vaccination, Varicella, Cholera, Whooping Cough, Erysipelas, Hay Fever. By different authors. Edited by Sir J. W. Moore. Cloth, $5.00 net.

Lea Brothers & Co., Philadelphia and New York.

The Medical News Pocket Formulæ for 1902. By E. Quin Thornton, M.D. Fourth edition, revised.

The New Era Printing Company.

Outlines of Anatomy. By Edmund W. Holmes, A.B., M.D. Second Edition. 1902.

The Year Book Publishers, Chicago.

The Practical Medicine Series. Under the editorial charge of Gustavus P. Head, M.D. Vol. III., Eye, Ear, Nose and Throat. December, 1901.

H. K. Lewis, London.

Handbook of Bacteriological Diagnosis for Practitioners. By W. d'Este Emery, M.D., B.Sc., Lond. 1902.

Rough Notes on Remedies. By Wm. Murray, M.D., F.R.C.P., Lond. 1901. Fourth edition.

Obituary

WILLIAM SCOTT MUIR.

Little did any of us dream that Dr. Muir, the big, hearty, magnificent Nova Scotian, whom we met at Winnipeg last August, would so soon be numbered with the dead ; and none of us, who had the good fortune to be in his company on steamer and train from Montreal to the west, will ever forget the pleasant hours spent together, for Dr. Muir was distinctly a vivid personality, and we loved him for his strong, rugged virility, which at all times radiated from the man like the flashing of a precious stone under the beams of the morning sun.

Dr. Muir was a sentinel who seldom asked for exchange of guard ; a medical soldier who rarely deserted his post of duty, save to perfect himself still further in the art dear to him as the breathing of his life, that life, public and private, which all might read and reading approve ; therefore it is not surprising that to the people of Truro, his native town, Dr. Muir's death came as a veritable calamity, bowing every head in grief. Not a man, woman or child but felt the loss of a personal friend, a man to whom all could look up to for guidance or counsel, in joy or distress, a human oak, upon whose giant form the weak ones might fling their twining tendrils in full confidence of support. But the oak has tottered and fallen, seemingly long before its natural term of life, and Dr. Muir has passed away in the midst of a loyal and devoted people. Extraordinary it is in these prosaic days to witness such scenes of grief and lamentation as were exhibited in the town of Truro during the passage of the funeral cortege to the burial ground, every store, factory and place of business being closed, while the streets were filled with mourning citizens desirous of paying their last sad tribute of respect to the devoted physician, whom all had worshipped, and wondering if ever they might look upon his like again.

Dr. Muir died almost literally in harness. Only three days before his death and while suffering considerable abdominal pain, he was unwillingly deterred from a long professional drive by the wild spring weather and rough state of the country roads, but, at the solicitation of friends, he was finally compelled to retire to bed, where he remained until his life-long friend, Dr. John Stuart of Halifax, had been called in, who at once recognized the presence of appendicitis and that immediate surgical interference was imperative. The operation was performed on Sunday morning, the ninth of March, by Drs. Stuart, David Muir, brother of the deceased, Yorston and Kent ; but, unfortunately, complications of such a character were discovered that the surgeons realized that there was little or no hope for their patient who, conscious to the last and speaking lovingly to those around him, passed away the following morning at 11 o'clock, his surviving son, Walter, a student at King's College, only entering the death chamber a few minutes after the big heart of the father had ceased to beat.

Dr. William Scott Muir was born in Truro in 1853. He was a son of the late Samuel Allan Muir, M.D., L.R.C.P., who was born at Cookstown, County Tyrone, Ireland, and lived subsequently at West River, Pictou Co., and from 1843 to the time of his death in Truro. His mother was formerly Miss Esther Crowe, of Onslow. She died in 1875.

He was educated at the old Model School under Principal Calkin, and the Normal School under the lamented Dr. Forrester. He studied medicine with his father, and at the Halifax Medical School of Dalhousie University, where he graduated in 1874. He then filled the position of House Surgeon in the Provincial and City Hospital, Halifax, now the Victoria General Hospital. Shortly afterwards he proceeded to Edinburgh, where he spent some time in study, and took the L.R.C.P. & S. of the Edinburgh College in 1877. He also took a post graduate course in Edinburgh in 1879, and another in London in 1891.

Ever since he commenced the practice of his profession in Truro, he has been eminently successful. From time to time he visited the chief centres of medical education in Britain and America and took a keen interest in the advancement of the medical science.

He was a most active member of the Nova Scotia Medical Society. He was elected to the position of Secretary-Treasurer in 1887, and was annually re-elected to that office. It is not too much to say that the present flourishing condition of that Society is chiefly due to his untiring efforts on its behalf. He was Secretary of the Colchester Medical Society on its formation in 1883, and continued until its reorganization in 1889, when he was elected President. In 1901 he was President of the Maritime Medical Association at its meeting in Halifax, and he also held office in the Canadian Medical Association, at whose meetings he was a frequent attendant. He held the position of examiner in Materia Medica and Therapeutics in both Dalhousie and King's Colleges, and was also an examiner for the Provincial Board. He was a fellow of the New York Medical Society.

Among the valuable papers written by our late friend were :—

(1) Cocaine, its use and abuse.
(2) Fracture of the Patella.
(3) Notes on Midwifery cases.
(4) An Address on Therapeutics.
(5) Thrombosis of the Vulva.
(6) Tuberculosis of the Arm cured by an attack of Erysipelas.
(7) Infectious Pneumonia.
(8) Typhoid Fever.
(9) Presidential Address, Colchester County Medical Society, 1900.
(10) Presidential Address, Maritime Medical Association, 1901.

In order to further and appropriately perpetuate the memory of the late Dr. Muir, his townsmen are now engaged in subscribing money for the purpose of erecting in Truro a Muir Memorial Hospital, and although the individual contributions are limited to the sum of one dollar, already a considerable amount has been secured. Mr. E. A. Randall, Treasurer of the fund, will gladly receive from members of the profession subscriptions to the amount indicated, and every medical friend of our departed brother should avail himself of this opportunity of contributing towards a monument, which will preserve, long after we have passed away, the memory of one of the noblest men that ever dignified our profession.

W. H. Drummond.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXI. MAY, 1902. No. 5.

Original Communications.

ADDRESS OF SIR JAMES GRANT, M.D., F.R.C.P. (LONDON), OTTAWA, PRESIDENT TUBERCULOSIS ASSOCIATION OF CANADA.

Gentlemen:—

Let me welcome you to the capital, where I feel confident you have come from the Pacific to the Atlantic, as well as the great neighbouring Republic, to give a helping hand in the noble work of relieving suffering humanity and staying the spread of consumption, a disease so serious in its nature, and so sadly fatal, as to attract the attention of the civilized world. In all great undertakings, time is an important factor, and of such, we have ample proof, in the history of the first year, in which the society was formed under the patronage of His Excellency Lord Minto. Frequent committee meetings have been held, and through the liberal contribution of Mr. Clergue and the generosity of Hon. Mr. Fisher a considerable amount of selected literature, relative to tuberculosis, has been published, in many of the leading papers, having a wide circulation in the Dominion. Several hundred copies of Dr. Kopf's able essay on tuberculosis were circulated among the various Boards of Health of the Dominion, an evidence of our efforts to keep pace with the times.

The influence of the Church, Protestant and Catholic alike, in Canada, was sought by public addresses on the subject of tuberculosis. The University of Ottawa in 1901 ; the Presbyterian Assembly in July, '01, and the Methodist Conference, Pembroke, numbering many hundreds of the leading minds of the day, endorsed the action of this Association, and tendered their hearty co-operation in forwarding the work, in their respective spheres of duty. In February last, an address was delivered in Victoria University, Toronto, calling attention to the correlation of the forces at work in Sanitary Science, Food Supply, Alcohol, and Education, as factors in the production of a soil, in the human system, as fit receptacle for the bacillus tuberculosis, unless otherwise guided and directed, in these lines of action, so as to preserve and retain the normal balance of power and thus guard the health of the system.

We are assembled to-day to take into consideration more active steps towards organization, as well as to invite the co-operation of the public to those lines of action so necessary at this juncture. When we consider the number of poor, helpless people, out in the cold as far as proper hospital accommodation is concerned, is it any wonder we are moved under such sad and trying circumstances. As a whole, our people are tolerably well aware of the great importance of this subject, and what we now need is spirited direction, and our efforts will undoubtedly receive merited encouragement. We have experienced some difficulties, as like undertakings in other countries, in all of which centres time was the essential factor to ensure success.

The Local Government Board for Ireland recently issued a memorandum on the subject of Tuberculosis to all Country Borough Councils, District Councils, Boards of Guardians and Dispensary Medical Officers, owing to the fact that the excessive mortality of Ireland from tuberculosis was fully half as much again as from all the zymotic diseases together. The resolutions adopted at the recent London conference as to the influence of over-crowding, defective ventilation, and general insanitation, as factors predisposing to and spreading the disease, received particular attention. This Board considers the most necessary step to commence with is to educate the people by leaflets entitled, "Information for consumptive people and those who live with them." These directions issued by the Local Government Board in Ireland carried more weight than from any private source. Such action in Canada would be a step in the right direction, considering that from 7,000 to 8,000 deaths from consumption are recorded annually in our Dominion. At a recent meeting of "The Winchester and District Branch" of The National Association for the Prevention of Consumption (England), they were advised by Lord Salisbury "that as soon as the people of this country are really moved by this question, then the Government will do what the people want." I feel confident this opinion from Britain's leading statesman will be reflected in the Colonies of the Empire, and a helping hand from the State will in time be forthcoming, to guard and protect the best interests of our people. Since our former meeting there has been considerable veering round as to views then held on Tuberculosis. In fact, nothing is more evident in the current of medical literature than the new aspects as to tuberculosis almost constantly presenting, and more particularly the indication of a return to ideas held prior to the discovery of the turbercle bacillus.

Recently, Koch's positive opinion, the result of most careful experiments is, that the bacillus derived from tuberculosis disease in man will not produce the lesion in cattle, and that the coincidence of human tuberculosis with exposure to Bovine Tuberculosis has not as yet been thoroughly defined, except in a few cases of no actual importance. In "*The Veterinary Record*," March 15th, 1902, Arloing has made a communication to The Academy of Medicine, Paris, giving the results of three series of experiments, in which the bacillus from different human sources has determined tuberculosis in cattle, sheep, and goats, by intravenous injection. The animal lesions appeared as tubercle, confluent or distinct in lungs, liver, spleen, glands, and kidneys, and were marked by early caseation. Having produced the disease in 23 animals, he considers he has a fair answer to Koch and Schutz. He sums up as follows :

1st. That the virulence of the bacillus is modified by its host, and in some animals the human possesses less activity than the bovine.

2nd. A pure culture of the human bacillus produces the typical animal disease in bovines, sheep and goats, etc.

3rd. And this disease is indistinguishable from that produced from animal sources.

4th. That the unity of Koch's bacillus, in man or beast, remains undisputed.

5th. That Koch and Schutz have not produced sufficient evidence to substantiate their statement, that there is a distinct difference.

6th. The precautionary measures, in regard to milk and meat, should not be relaxed.

The Journal of Comparative Pathology and Therapeutics, London (September, 1901), contains an exceedingly able article by John McFadyean, of the Royal Veterinary College, London, in which he takes the same views as Arloing of Paris, and sums up as follows :— "With regard to the view that the difference between human and bovine bacilli, in respect of virulence for cattle, is of such a fixed and constant character that it may be relied upon to distinguish the one from the other, it need only be said that that is very far from proved."

Twenty years have elapsed since the lung bacillus made its appearance, and now to-day the great problem of identity, in the human and bovine species, is a vexed question. Here is a fine point worthy of research, in the bacteriological laboratories of this continent, so liberally endowed by Rockefeller, Carnegie, Pierpont Morgan and Sir William Macdonald. Professor Grawitz makes two very striking statements, 1st. That primary tuberculosis of the alimentary canal is rare, and still, the chief entrance for meat and milk. 2nd. That primary tuberculosis of the upper air passages, in which bacilli, in the air and the food, would likely lodge, is a rare occurrence also. The first impression of the deadly character of the "Tubercle Bacillus" has changed considerably during a brief period. Dr. Clifford Allbutt, of Cambridge, England, states his opinion that the prolonged use of tuberculous milk is known to have produced no serious effect in old or young, and this statement endorsed by Koch " that man *was not infected* by the tuberculous milk and meat of " the Bovine species," is quite a change of opinion, and one which cannot fail to lessen the fears of an excited public on these points. Of the two articles of diet, meat and milk, there is certainly much less prospect of danger from the former than the latter, as meat is consumed in a cooked condition, and thus the vitality of any contained organisms destroyed. Tuberculosis is a disease more of the visceral organs and serous surfaces than otherwise, and not being disseminated by the vascular system, the muscular tissues are not so readily invaded. Doubtless in advanced stages of this disease there may be a possibility of danger from the use of such meat. Here should come in systematic meat inspection in abattoirs by able experts under Federal and Municipal inspectors. By the advocacy of such action, our Association may in time accomplish a good work, and lessen, in a remarkable degree, the present death rate from tuberculosis. The impression gaining ground is that a positive tuberculine reaction should not be followed by the severe and expensive method of destroying all such flesh as useless and dangerous. According to Sir Dyce Duckworth (*Lancet*, Nov. 9, 1901), one of the most important elements concerned in the question is the personal factor, or the relation of the host, towards the intruding and infecting parasite. The alarming impression abroad is, that the human system is ever subject to danger from the surrounding atmosphere containing bacilli. Providing the system has a fit soil, brought about by diversified circumstances, the bacillus may lodge and take root, but certainly not otherwise. Where such soil is absent, there is comparative freedom from this disease. Facts of a telling character cannot fail to exercise a beneficial influence on the public mind, and lessen in a great degree the apprehension which exists as to the sudden invasion of tuberculosus, inasmuch as it is a question of soil proclivity in the particular host, which receives the tuberculous microbe. It is an old saying, " nothing new under the sun," illustrated by the fact that Virchow, years ago, noted the difference between Human and Bovine Tuberculosis, and Hueppe also pointed out a distinct *morphological difference* in the two *micro-organisms.*

At this stage of our endeavours, it may not be unproductive to survey the groundwork of argument over, briefly to ascertain exactly where we are as far as this important subject is concerned. When the bacillus was discovered, the infectious character of the disease almost universally centered on Koch. The Grand Duke of Tuscany, in 1754, issued an edict relative to its infectious character, and in various parts of Europe, particularly Naples, Lucca, Venice, Bologna and Rome, attention was directed years ago to this particularity of the disease. It is somewhat remarkable how the infectious nature of tuberculosis, through time, was in a great measure lost sight of, and grasped subsequently, almost anew, on the discovery of Koch. A question before us, and one which will doubtless be carefully considered in the ætiology of tuberculosis, in the tubercle bacillus, the *chief factor in its production.* It is a known fact that individuals are immune to certain doses of the tubercle bacillus, and does the present state of our knowledge warrant us in requiring the absolute isolation of phthysical patients? What we do require is better accommodation for the treatment of the poor; less of the sweating manufacturing process; increased vital capacity of air in underground or overground compartments, where operatives are almost huddled together. In addition, the result of excessive strain of brain and general nerve tissue in our present system of education; the food problem and scrap diet in school or college life; the excessive use of alcohol, and defective sanitary arrangements; all of which, misdirected, have an undoubted tendency to lower the vital powers of the system, and become potent factors towards the development of tuberculosis. As to the actual life history of the veritable microbe, we owe much to a French Canadian, Dr. E. L. Trudeau, of Saranac Laboratory. In 1886 were published a series of experiments, demonstrating the infectiousness of bacillary sputum, and the harmlessness of expectoration free from bacilli, taken from a patient supposed to have consumption. He recently pointed out the possibility of infection of the hands of consumptives, and demonstrated the presence of living bacilli on the hands of patients using handkerchiefs, and their absence generally from sanitorian patients who made use of the proper cuspidors; also noted most carefully that inoculated rabbits, allowed to run wild on an island, recovered, whilst those subjected to unhealthy conditions *died* within a short time. These are practical points of great moment, and indicate the importance of the open air treatment of this disease so generally adopted at the present time, which actually required no special climatic condition beyond our own shores. Saranac Laboratory has demonstrated two important facts, that a sanitarium may extend its usefulness not only to its inmates, but to research, in the line of scientific tuberculous problems at present absorbing much attention at home and abroad.

In conclusion, I desire to thank the Association for the honour of occupying the chair during the past year, and to wish every success, in the new lines of work, awaiting action, to guide and conserve the best interests of our people.

A CASE OF TUBERCULOSIS PRIMARILY OF INTESTINAL ORIGIN COMBINED WITH TERTIARY SYPHILIS.*

BY

Albert George Nicholls, M.A., M.D.

Lecturer in Pathology, McGill University, and Assistant Pathologist to the Royal Victoria Hospital, Montreal.

The case which I have the opportunity of recording is interesting, not only on account of its being a somewhat rare type of tubercular infection, but also because two diseases running concurrently, the clinical features were rendered more or less atypical with the result of a partial error in diagnosis.

Since Koch's recent address at the last Tuberculosis Conference in England, in which he pointed out the comparative rarity of tuberculosis of intestinal origin and maintained that human and bovine tuberculosis were essentially different diseases, much interest has arisen as to the modes of infection in tuberculosis. The statistics given by the various observers vary somewhat on this point, although I think all are prepared to assent to Koch's proposition that primary intestinal tuberculosis is relatively rare; how rare no one as yet can positively state, consequently every undoubted case arising in this way is worthy of being placed on record, and careful investigation of post mortem statistics should be made in order to clear up many obscure points.

The German figures show a very trifling proportion of cases of primary intestinal infection in tubercular cases. From the post mortem records at the Charité Hospital at Berlin during five years, Koch only saw ten instances. In 933 cases of tuberculosis in children at the Emperor and Empress Frederick Hospital, Baginsky never found tuberculosis of the intestine without simultaneous disease of the lungs and peribronchial glands. Biedert in 3,104 autopsies on tubercular children found only 16 cases of intestinal tuberculosis. Spengler (*Zeit. f. Hygiene,* xiii, 1893, p. 346), refers to 92 cases of tuberculosis in four of which the intestinal tract was alone affected. Kossel (*Zeit. f. Hygiene,* xii, p. 59), in 286 consecutive autopsies on children, of whom 22 had died of tuberculosis, in only one found the infection confined to the intestinal tract.

The French and English statistics agree on the whole fairly well and seem to show that in these countries the percentage of primary intestinal tuberculosis is considerably higher than in Germany. According to Marfan (Traité des Maladies de l'Enfant, Tome 11, p. 636), alimentary tuberculosis is met with especially between the ages of one and five and accounts for about 8 per cent. of the cases of tubercular infection observed at this period of life. Perhaps a few of the English statistics may be referred to here.

---

* Read before the Montreal Medico-Chirurgical Society, April 4, 1902.

Still (*Brit. Med. Journ.*, Aug. 19th 1899, p. 455), in 769 autopsies on children under the age of twelve at the Hospital for Sick Children, Great Ormond Street, London, tubercular lesions were found in 269 instances. When the channel of infection could be made out with some certainty the proportional involvement was as follows:—Lung, 105 times; intestines, 53; ear, 9; bones and joints, 5 times. When tuberculosis was found accidentally in children dying of other diseases, and where the lesions had not progressed beyond the initial state—a class of cases very valuable as affording almost certain evidence with regard to the mode of infection—the proportion was lung 26, intestine 16, ear 1.

Shennon (*Edinburgh Hospital Reports, 1900*), in 355 cases of tuberculosis at the Royal Hospital for Sick Children, Edinburgh, made out the primary seat of the disease at autopsy in 331 instances. In 67.7 per cent. the infection was respiratory, in 28.1 per cent. alimentary, a proportion of 1 to 2.3.

It is evident from these figures that abdominal tuberculosis is very common in Great Britain. Other evidences are forthcoming that this form of tuberculosis is occasionally met with in other parts of Europe and in America.

Our own statistics in Montreal show, like the German, a remarkably low percentage. In 635 autopsies at the Royal Victoria Hospital tubercular lesions were found 202 times and only one case, that here recorded, was an undoubted instance of a primary intestinal infection, although in one other a large calcareous mesenteric gland was found, but without intestinal ulceration, which possibly was of the same nature.

A very complete consideration of the modes of infection in tuberculosis will be found in D. E. Salmon's report on the "Relation of Bovine Tuberculosis to the Public Health," (*U.S. Dept. Agric. Bureau of Animal Industry, Bull. No. 33, 1901,* Wash.), and also in a paper by Prof. A. D. Blackader (MONT. MED. JOURN., Dec. 1901, p. 905).

It must be remarked that it is difficult to arrive at safe conclusions as to the relative frequency of the different methods of infection from the fact that in the vast majority of cases where the intestines are infected, the lungs are involved as well and it is not always easy to determine which was the primary seat of the disease. The relative degree of involvement of the associated glands is not always a safe guide and another element of error is added from the fact that the tissues or organ primarily invaded often fails to show pathological change, which only manifests itself in some deeper structure related through the lymphatic vessels, or perhaps in some distant organ. This is shown by the fact that while most cases of tuberculosis are due to the inhalation of bacilli, the mucous membrane of the naso-pharynx is but rarely primarily involved. Similarly, it is possible that in some cases where the bacilli have entered from the intestinal tract, no local lesion is produced and the disease may manifest itself in the lungs giving rise to a picture, both clinically and anatomically, of primary pulmonary tuberculosis. This possibility was also suggested to my mind by the results of some experimental work on tuberculosis in rabbits, for in one case where 1 cc. of a standardized emulsion of an attenuated growth of B. Tuberculosis was injected subcutaneously in the leg, the inguinal and retroperitoneal glands were found free and the only lesion discoverable was tuberculous caseation in the left lung and pleura. The recent researches of Baumgarten, Aufrecht and Ribbert also seem to indicate that the blood and lymphatic circulation play a much more important part in the dissemination of the tubercle bacillus than has hitherto been suspected. Consequently, if we alone consider the records of undoubted cases of primary intestinal tuberculosis, it is probable that the numbers fall considerably short of the cases of infection through this tract that actually occur.

For the clinical notes of the case here described I am indebted to to Drs. James Stewart and A. E. Garrow.

E.W., æt. 21, who died Jan. 17th, 1902, at the Royal Victoria Hospital. Complaints were ; weakness ; headache ; ulcer of the leg.

Personal History.—Born in Montreal; had done inside work nearly all his life; used tobacco freely but not alcohol. Gonorrhœa three years ago; six months later had chancre followed by rash and sore throat which lasted about a week. He was put under mercurial treatment in the form of proto-iodide pills and the secondary manifestations disappeared. He was not seen for some time and neglected treatment, returning some months later with a recurrence of his secondaries.

Family History.—Parents alive and well, no history of cancer, rheumatism, nervous disease or tuberculosis.

History of Illness.—In July, 1901, a small pimple appeared about the internal malleolus in the left leg, in a few days this opened and since that time gradually became larger. He began to feel weak and noticed that he was becoming pale; altogether in the past year he lost 24 pounds. The condition of the leg obliged him to give up work on December 1st. The urethral discharge kept up more or less during his illness. From January 1st, 1902, was treated in the Surgical Department for ulcer of the leg which was regarded as syphilitic and his general condition was so bad that the case was regarded as syphilitic cachexia. During the first week of January he began to complain of numb sensations about the mouth, although these were only transitory, and also in the right side of the body. For some time headache had been present and this became more severe about this time. The mouth was noted to be retracted to the left and he was unable to use the muscles of the right side of the face as well as of the right arm and leg; there was some difficulty in talking and swallowing. The tongue was pushed out to the right side. The knee jerks were absent. He had a great deal of frontal headache and on one occasion vomited.

He was transferred to the medical side, under Dr. James Stewart, on the 10th of January. The patient was very thin and emaciated, dull and stupid, and complained of some headache. Appetite poor, bowels regular. Pulse, 96; Temperature, 96; Respirations, 20.

Vascular System.—Arteries showed some thickening, pulse of fair volume and tension ; heart normal except that pulmonary second sound was accentuated.

Respiratory System.—Vesicular murmur somewhat harsh, otherwise normal.

Glandular and Locomotor System.—The posterior cervical and inguinal glands were enlarged to the size of pigeon's eggs; the axillary and epitrochlear glands were also noticeably enlarged although not to the same extent. The skin was lax, the muscles wasted and there was an ulcer half the size of the hand over the lower part of the left leg.

Digestive System.—The lips red and dry; the tongue coated with brownish gray fur. The abdomen was somewhat retracted with some general tenderness on deep palpation; the central part of abdomen a little tense. The liver and spleen were not palpable and no abnormal tumour mass could be felt. Bowels regular.

Nervous System.—Dull and apathetic ; complained of some headache, chiefly frontal. There was marked general weakness, a little greater on the right than on the left side ; the power of grasp was not so good and the nasal fold not so marked on the right as on the left ; only at times did the tongue protrude to the right in middle line. Sensation to pain was decidedly impaired over the right side of face; over other parts of the body doubtful as statements were erratic. Eyes showed double optic neuritis; axes of eyes seem parallel but at times patient stated that he could see double. Organic reflexes normal; superficial increased; Babinsky's sign absent; no ankle or rectus clonus; the knee jerks absent.

The patient gradually became more dull and stupid, at times was restless; the pulse gradually became weaker and more rapid and food was taken badly. Respirations became more rapid and patient was completely unconscious.

Diagnosis was syphilis and syphilitic basal meningitis.

Autopsy.—Body of young adult male, greatly emaciated with usual signs of death. The pupils were slightly dilated, the right being somewhat larger than the left; there was no evidence of iritis. The axillary, posterior, cervical, inguinal, and femoral glands greatly enlarged, especially in the inguinal and femoral regions. Some of these were quite firm and hard, others soft. The penis was phimosed and there was an old scar on the corona. On the right of the left leg in the lower third was a shallow ulcer with slightly elevated edges which had a sodden white appearance ; the base was formed of clean granulation tissue; the skin in neighbourhood shiny and pigmented, showing evidence of some healing.

Brain.—Weight, 1425 grms.; calvarium somewhat asymmetrical; the dura slightly injected; pia was everywhere cloudy and along the vessels was a turbid milky-looking exudate; here and there both in the dura and pia-arachnoid could be seen small miliary tubercles. The base was similarly affected but there was relatively little exudate. Cerebral vessels normal; the convolutions of the brain were greatly flattened.

Neck and Thorax.—Tongue covered with dirty greyish fur; tonsils soft and pale; larynx and trachea normal. The pleural cavities were empty and the lungs were free from adhesions.

Left Lung.—540 grms,, rather bulky; the apex free from puckering; the lower lobe very œdematous and congested. Throughout the lung numerous miliary tubercles were found.

Right Lung.—290; only slight pigmentation, a few hyaline-looking miliary tubercles noted; on section the tissue was rather dry but not congested; miliary tubercles of hyaline appearance, about the size of millet seeds, were frequent in the lowest lobe. The peribronchial glands were slightly enlarged but free from tuberculosis. The bronchi contained a little reddish, frothy fluid. Careful search was made throughout the lung at the apices and hilus for evidence of old tuberculosis without result.

Heart—200 grms.; small; epicardial fat absent; muscle of fairly healthy red color.

Abdomen.—The duodenum showed slight dilatation and occupied the fissure between the right and left lobes of the liver; the veins of the abdominal viscera were everywhere greatly congested; the peritoneal cavity free from fluid; the mesenteric glands were greatly enlarged, many of them of a distinct yellowish color and when incised contained thick, greenish-yellow pus. A film made from this showed numerous tubercle bacilli. About 105 cm. from the end of the duodenum was the first evidence of ulceration of the intestine as shown by the local contraction and kinking of the bowel wall so that the false appearance of a diverticulum was produced. The contracted portion of the bowel showed a sort of transverse linear scar. In the neighbourhood of this the venules were greatly congested, the serosa cloudy with slight fibrinous deposit and there were numerous subserous tubercles of greyish or greyish-yellow appearance arranged parallel to the scar and extending along the mesenteric lymphatics so as to resemble a string of little beads. The mesenteric glands corresponding to this region were greatly enlarged and of a yellowish color.

Five cm. below this was a varicosed lymphatic vessel containing yellowish inspissated material. On further examination there were about fourteen ulcers altogether as shown by local inflammation and subserous tubercles ; four or five of these formed girdle ulcers. The large bowel did not show any external evidence of tuberculosis. Just to the right of the vertebral column, lying opposite the promontory of the sacrum and occupying the whole distance from this to the level of the duodenum, was a large elevated mass of a semi-fluctuating feel and this was found to consist of hyperplastic retroperitoneal glands, which on section showed areas of opaque condensation, but without definite caseation or suppuration. The glands in the right inguinal region were found distinctly cheesy.

Spleen.—190 grms.; organ rather dense and of dark color. On section fairly dry. It contained numerous millet-seed-like tubercles of pearly grey appearance.

Stomach.—Mucous membrane slightly injected.

Intestines.—Duodenum dilated; jejunum normal; in the ileum, corresponding to the external appearances just mentioned were four or five girdling ulcers with somewhat thickened and inflamed looking edges, slightly undermined in places and with fairly smooth bases. Minute tubercles could be seen here and there in the bases. Besides this, other ulcers were noted which had originated in the solitary follicles and again others in the Peyer's patches, many of which presented the cribriform arrangement frequently found in typhoid fever; the serosa, however, corresponding to these showed numerous minute tubercles. At the ileo-caecal valve was a very large ulcer extending the whole length of the valve having thick edges and an infiltrated base. Two or three longitudinal ulcers of somewhat similar character were present in the last four inches of the ileum. Appendix normal; large intestine free from tuberculosis.

Pancreas.—Small and thin; the glands in the neighbourhood were enlarged.

Liver.—1650 grms. ; organ dark colored and of nutmeg appearance. Numerous minute pin-point dots on the surface were noted resembling miliary tubercles. On section it was of nutmeg appearance, very thickly studded with miliary tubercles of a greyish pearly appearance.

Left Kidney.—165 grms.; on section the organ was markedly congested. In two of the pyramids there were localized tubercles rather larger than grape-seeds; one or two small ones were found in the cortex which was possibly a little swollen; pelvis and ureter free from tuberculosis.

Right Kidney.—135 grms.; in all respects similar to left with the exception that no tubercles were noted.

Bladder.—Two small subserous tubercles present at the base.

Genitalia.—Normal.

Anatomical Diagnosis.—Primary Tuberculosis of the Intestines ; Tuberculosis of Mesenteric, Retroperitoneal, Axillary and Inguinal Glands; Generalized Miliary Tuberculosis affecting Meninges, Liver, Spleen, Lungs, Kidneys, Bladder; Cloudy Swelling of Organs; Tertiary Syphilis ; Gumma on Left Leg ; General Marasmus.

MICROSCOPICAL EXAMINATION.

Brain and Meninges.—There was distinct evidence of acute meningitis, the pia-arachnoid being thickened. There were large collections of small round cells about the vessels and this infiltration extended down the various septa and affected the superficial layer of the brain substance. In addition to polymorphonuclear leucocytes numerous hyaline mononuclear cells were noted. Stained by the Ziehl-Nielsen method, very numerous tubercle bacilli, many of them presenting a characteristic beaded appearance, were observed.

Lungs.—Showed congestion with small areas of collapse; numerous miliary tubercles with slight central caseation and a few giant-cells without peripheral fibrosis.

Spleen.—Markedly congested; very numerous minute tubercles were present, some showing central caseation with large giant-cells, others again being very fibroid in character.

Liver.—A marked nutmeg condition with some pigmentation and atrophy of the liver parenchyma. Very numerous miliary tubercles were present showing central caseation with giant-cells but with little or no tendency to the formation of fibrous tissue.

Pancreas.—Normal.

Glands.—The retroperitoneal and mesenteric glands showed great inflammatory hyperplasia with slight increase of the epithelioid plates and here and there some hyaline degeneration. The retroperitoneal glands however, showed no caseation ; this was confined to the mesenteric and inguinal.

Kidney.—Showed merely advanced cloudy swelling and congestion.

Suprarenal.—normal.

Ulcer of Leg.—Owing to the association of the two diseases, syphilis and tuberculosis, it was important to determine of what nature was the ulcer described. A number of sections were taken from different parts and stained by various methods to demonstrate the tubercle bacilli. All the sections showed substantially the same condition, namely chronic inflammation with granulation, the formation of new vessels and scar tissue. Tubercle bacilli were not discoverable and from the fact that the ulcer showed marked evidence of healing without any signs of caseation, it was finally concluded that the ulcer was not tubercular but rather syphilitic in accordance with the clinical diagnosis.

Bacteriological Examination—Agar cultures from heart-blood, spleen and liver were sterile.

From the history in this case, together with its course it was not surprising that a diagnosis of syphilitic meningitis should have been made. Considering the fact that two distinct diseases, syphilis and tuberculosis, were running concurrently, whereby the clinical course of both was somewhat masked, the diagnosis was rendered extremely difficult if not indeed impossible. It is, of course, easy to be wise after the fact, but it is possible that a more accurate opinion might have been formed had a little more weight been laid upon certain clinical appearances. With a definite history of chancre two and a half years previously, with neglected treatment during the secondary manifestations, the obvious conclusion, of course, was that all the manifestations were syphilitic. Meningitis occurred just about the time that syphilitic meningitis is liable to come on and the patient's age was also in favor of this assumption. The history of severe frontal headache for some time before localizing symptoms set in, also suggested syphilis. The only condition which was unlike syphilis was the great enlargement of the posterior cervical, axillary, inguinal and femoral glands. The condition of these was more suggestive of tuberculosis than of syphilis. Enlarged glands in the tertiary stage of the disease are certainly somewhat rare. As a rule it may be said that when the lymphatic glands are enlarged in tertiary syphilis, it is the deeper abdominal and visceral glands which are affected. When the superficial glands are involved, it is more usual for those of a certain district to be attacked than for a general involvement throughout the body to occur. Then again syphilitic adenopathy does not produce such large masses as the tubercular form. Tubercular glands are more common in young people and children than in older persons. Consequently we see that from the condition of the glands alone, the presumption was rather in favor of a tubercular lesion.

On the other hand it must be said that the disease did not run the course of the ordinary tubercular meningitis, the temperature being, for instance, subnormal and the usual stages not being recognizable. It is possible that had the tuberculin test been used or lumbar puncture made that the correct diagnosis might have been reached. The case, was, however, one of extreme difficulty and the above considerations practically sum up all that can be said in regard to the differential diagnosis.

Apart from the complications of two diseases the case is important as it is one of undoubted primary infection with tuberculosis through the intestinal tract. The ulcers in the bowel were typical of tuberculosis, the lesions were most marked in the neighbourhood of the intestine, mesenteric and retroperitoneal glands, while those in the rest of the body were merely a terminal dissemination of the disease of a miliary type. Careful search was made in all the districts usually affected first by tuberculosis without finding any evidence of an old lesion. There being no area of tuberculous softening about the respiratory passages, infection of the intestines through sputum is obviously impossible. The localization of the ulceration in most instances to the lymphoid elements of the intestines, as in the case of typhoid or in the ordinary sputum-ingestion type of intestinal tuberculosis is practically pathognomonic of an alimentary type of infection and not a hæmatogenic one. It was somewhat striking with such extensive tuberculosis in the intestine that diarrhœa was not present, nor were there any other signs pointing to intestinal or abdominal involvement.

A CASE OF MULTIPLE MYELOMA.*

BY
JAMES BELL, M.D.,
Professor of Clinical Surgery, McGill University; Surgeon to the Royal Victoria Hospital, Montreal.
AND
C. B. KEENAN, M.D.,
Assistant Pathologist to the Royal Victoria Hospital.

Mrs. W. K., aged 44, a tall, slightly built woman weighing 82 pounds, a farmer's wife, mother of three children, and having had one miscarriage at three months, was admitted to the Royal Victoria hospital on the 5th December, 1901, with painful enlargement of the right tibia. She gave the following history :—

About a year previous, a little swelling appeared on the front of the leg, a few inches above the ankle. It was painful, red and tender, and increased gradually in size, spreading over a large area. Other similar swellings also appeared along the tibia, until at the present time the bone is involved to within three inches of the knee. At times there have been great pain and tenderness, necessitating the use of a crutch in walking, and at other times there has been very little discomfort.

She attributes her condition to striking her chin upon the stairs a short time before the swelling appeared, but no direct connection can be traced between the injury and the swelling of the tibia. About 16 months ago, a tumor appeared on the upper and outer side of the left breast. It was hard, but neither painful nor tender. The breast was removed in August, 1901. It is described as about half the size of an egg, and a month after the removal of the breast, the axillary glands, which were palpably enlarged, were also removed.

There is no record of microscopical examinations of the removed tumour or glands. The whole of the lower three-fourths of the tibia was enlarged, and in the subcutaneous part it was irregular and nodular, the nodules being as large as a twenty-five or fifty cent piece, flat and hard. The tarsus seemed also to be distinctly enlarged, and there was some œdema of the foot and leg, especially when not kept constantly elevated. She had lost 30 pounds in weight during the year. There was no venereal history and nothing to lead to a suspicion of syphilis, either hereditary or acquired, but the clinical aspects of the case had caused her physician to prescribe iodide of potassium in large doses ; which she had been taking for a year without benefit. I continued this treatment until the 10th of February, when I made incisions over a couple of the nodules and trephined the bone, which was very soft. The examination of the bone tissues removed, led me to amputate through the knee joint on the 20th February. The limb was skiagraphed and showed an enlargement of the tibia and tarsal bones. The other organs were healthy, and she made an excellent recovery. Albumen was never discovered in the urine.

---

* Read before the Montreal Medico-Chirurgical Society, March 7, 1902.

Pathological Report.

Specimen received is right leg and foot. Tissues of tibia, tarsal bones and base of first metatarsal, are affected. In the tibia the medullary cavity, compact bone and spongy bone, with the exception of a small portion in the upper third posteriorly, are replaced by new growth. This material is redder than normal tibial marrow, firmer than cancellous bone, and cuts grittily. New growth has developed under the periosteum, but has not invaded the overlying tissues. It has eroded cartilage of ankle joint, in parts, and extends along anterior ligament.

In the tarsal bones, the cancellous portion alone is affected, but here the tissue is much softer than normal.

Examination of scrapings, fresh and stained with eosin and methylene blue, Ehrlich's triacid stain, and polychrome methylene blue, shows nucleated and non-nucleated red blood cells, with a large number of round or oval cells, with round palely-staining nuclei. No specific granules could be seen.

Decalcification of tissue was necessary for tissue cutting. Microscopic sections of tissue from astragalus showed major part to consist of masses of cells. These cells vary slightly in size, 10 to 20 micromillimetres in diameter. They are usually round, but in places oblong or even flattened. Vacuoles varying in size are seen in a few cells. Nuclei of tumour cells are usually single, but occasionally two or three were in the same cell. Nucleoli are nearly always seen. Chromatin varies in amount, but generally is well marked. Mitotic figures are not seen. In some cells there is an appearance suggestive of amitotic division. Nucleus is often placed eccentrically. There is a very fine intercellular reticulum in most parts, but in some of the cell masses the cells appeared to lie directly in apposition. Cells may be found single or in solid clumps, but more often in several layers arranged around a central lumen containing blood, with which the tumour cells are in direct contact, no endothelial coat intervening. No definite blood-vessels can be seen among the tumour cells. These groups of cells are enclosed by a fine fibrous stroma. Outside this stroma there are irregular trabeculæ of osteoid tissue.

No osteoclasts, and very few osteoblasts are present. In the tibia there is a much smaller amount of fibroid tissue, but a marked increase of the osteoid trabeculæ. Here there are a few osteoclasts with numerous osteoblasts. New formation of osteoid tissue is evidently taking place.

It is difficult to decide whether to place the tissue under the head of alveolar sarcoma or under the subdivision termed myeloma. The tumours classified as myelomata vary much in morphology. The course and features of the disease in patients suffering from myelomata may also be very different. Rutizky,[1] in 1873, described a condition of multiple primary tumours of bone marrow and to this he gave the name "multiple myeloma." In his case the tissue of the tumours consisted of wide blood spaces without definite walls, located in areas of round lymphoid cells rich in chromatin, and dispersed in a wide-meshed, finely fibrillated network of connective tissue. He states that in places these tumours break through the bone and infiltrate the surrounding tissues.

Previous to this, in 1867, Bence Jones[2] had shown that the urine of a patient suffering from a similar disease contained albumose. This has been confirmed lately by several observers. Klebs,[3] in 1889, stated that the anæmic bases of these tumours can always be demonstrated.

Carl Winckler,[4] under the heading "myeloma," describes a condition of multiple medullary tumours of bones of trunk. Here tumour consisted of cells with a small amount of protoplasm and with a large, finely granular nucleus. All cells contained a single nucleus only. There was a very fine fibrous stroma between the cells. There was a great diminution of bone substance and the growth occupied all the medullary cavity. Numerous osteoblasts ; lying in very large Howship's lacunæ, were present. There was a development ,of new osteoid tissue under the periosteum.

Drs. Herrick and Hektoen,[5] in 1894, under same class, describe a tumour of sterum and ribs. In this case there was marked anæmia, poikylocytosis and neutrophile leucocytosis. There was marked emaciation and patient had recurrent attacks of fever. Here the tumour consisted of round lymphoid cells with quite large nuclei arranged in a finely fibrillated, and in parts homogenous, matrix. There were many blood spaces of irregular size and shape found in tumour, the blood being in direct relation with the tumour cells. No albumose was present in urine.

Kahler,[3] in 1899, describes a case lasting eight years. The condition was osteoporosis with development of new tissue resembling a round-celled sarcoma.

Wright,[6] in 1900, under same head, describes a case where there were medullary tumours of sterum and ribs. There was slight anæmia, weakness, and albumose in urine. Here tumour consisted of small round cells varying somewhat in size, some cells contained two or three nuclei. Nuclei were rich in chromatin. No mitosis. There were a very few, fine fibrillæ between the cells. There were numerous, thin-walled blood vessels. In parts bone absorption, in parts new formation of bone is shown. He states that the tumour cells are allied to plasma cells.

McCallum[7], in 1901, describes a condition of multiple medullary tumours of bones of trunk and of femur. Here tumour cells vary in shape, have one to three nuclei, and contain vacuoles. Nucleoli are nearly always present. Chromatin varies in amount. There is no mitosis to be seen. Cells lie separated by a fine fibrous stroma. There are numerous thin-walled vessels. From the appearance of the nuclei he states that the tumour cells are derived from the myelocytes or proper marrow cells.

In review, one sees that in the disease termed "multiple myeloma" the course may run from two to eight years. Fever may or may not be present. Albumose in urine is not constant. There may be marked changes in the cellular constituents of the blood, or there may be only slight diminution of the hæmoglobin. The cells of the tumours may be uniform in size with a small amount of protoplasm, or may vary in size with a relatively large amount containing vacuoles. Nuclei may be single or multiple, may be vesicular or rich in chromatin. The intercellular substance may be marked and consist of fine fibrillæ, a homogenous matrix, or may be absent. Cells may be arranged directly around large blood spaces, or there may be numerous, thin-walled blood-vessels. Bone absorption is always present, but formation of osseous or osteoid tissue may or may not be seen.

The constant features are :—The simultaneous occurrence of tissue resembling that of a round-celled sarcoma in the medulla of several bones. Adjacent bones are the ones usually affected.

The complete absence of involvement of other tissue than bone, except by direct continuity of growth of bony tumour into surrounding structures, that is, metastases are not found.

The regularity of size and shape of cell and the small amount of intercellular matrix.

For these reasons the above condition is termed one of multiple myeloma, as suggested by Professor Adami from a section of a small portion of the bone, removed for diagnosis previous to operation.

REFERENCES.

1. Deutsche Zielschrift f. Chirurgie, Ed. III., 162.
2. Allgemeine pathologische morphologie, 1889.
3. Transactions Pathological Society of London, 1877.
4. Virchow's Archives, Vol. 161.
5. Medical News, 1894.
6. Contributions to Medical Science, 1900.
7. Journal of Experimental Medicine, November, 1900.

A CASE OF CARDIAC ARRHYTHMIA.*

BY

KENNETH CAMERON, B.A., M.D.,
Assistant Surgeon, Montreal General Hospital.

Arrhythmia is the term applied to an intermission in the cardiac rhythm when one or more of the beats of the heart are dropped. Osler, in his "Practice of Medicine," states that seven varieties of arrhythmical action may be recognized, but the phenomena observed in the following case do not correspond with any one of them. The story of the man's condition is so extraordinary, that, had not the writer's observations been fortunately confirmed by those of a consultant, he would hardly have had the temerity to relate it. Furthermore, a search through the literature of the subject has failed to discover the report of a case presenting a similar state of affairs.

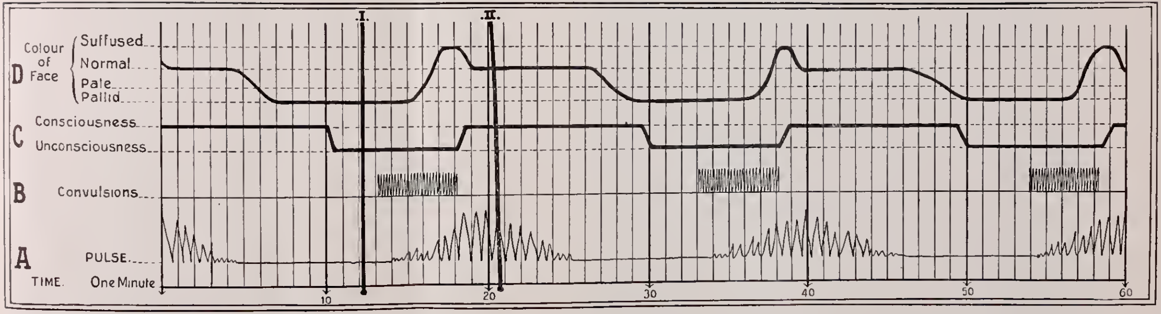
The subject of this note was a well-preserved man of 70 years, although he did not appear to be of that age. He had always enjoyed good health, living well, using alcohol but sparingly, and tobacco not at all. He was by occupation a clerk in an office, but his habits were not sedentary, for he was very fond of walking, and got over the ground at a speed quite unusual for a man of his years.

On Friday, August 16th last, I was called to see him and learned that two days before, on the way to his office, to gain time, he had run about two blocks. This indiscreet action was almost immediately followed by shortness of breath, and, what were described as "fainting attacks with more or less delirium," lasting from a few seconds to a minute or so. He had just recovered from one of these attacks when I saw him for the first time. He was sitting in an arm-chair breathing rather hurriedly, and with a somewhat anxious expression of countenance. Upon examination he was found to be a well-nourished man, with indications of but slight senile changes in his vessels. The heart was beating quite regularly, the pulse was 80, soft and compressible, the cardiac dulness was increased and the apex beat was ill-defined just outside the nipple line. The heart sounds were very faint, and a soft mitral murmur could be heard. The lungs presented no signs of disease. The digestive organs were, however, a good deal out of order, as he had been suffering from a sense of fullness and oppression in the epigastrium, with flatulency and constipation. Examination of the urine, on several subsequent occasions, proved that that fluid was free from abnormal ingredients. His mental condition was perfectly

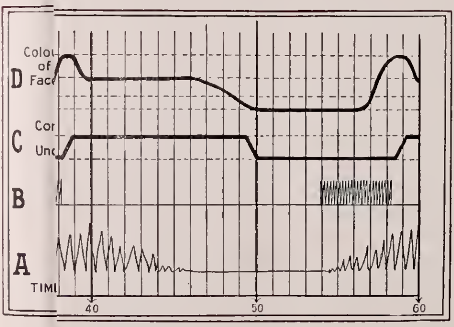
---

* Read before the Montreal Medico-Chirurgical Society, Jan. 3, 1902.

A DIAGRAMATIC CHART, ILLUSTRATING THE PHENOMENA OBSERVED.



ED.



clear, and beyond the symptoms already described he was suffering no inconvenience whatever. He was sent to bed, with orders that he should receive a purge and that his diet should be restricted to liquids.

During the ensuing twenty-four hours, though remaining quietly in bed, he had several attacks of unconsciousness. On one occasion upon getting out of bed and losing consciousness, he fell and struck his head. I saw him shortly afterwards and observed the following condition:

The cardiac rhythm (chart A) presented a condition somewhat analogous to that respiratory phenomenon known as Cheyne-Stokes breathing. There would be one or two full, and what I shall call, normal cardiac beats, then the beats would become more rapid, and lesser in volume until there would be absolutely no movement of the heart to be felt on palpation and no sound audible through the stethoscope, for a period of 8 or 10 seconds. Then the beats would commence again, hardly perceptible at first, but becoming fuller and slower until a normal beat was reached, again to increase in rate and decrease in force, and so on.

At the end of the period of the stoppage of the heart's action tonic convulsions (chart B), more or less general in character, occurred, and which lasted four or five seconds, terminating just before the normal beat was reached. The attacks varied greatly in severity, at times only the muscles of the face or a single group of muscles appeared to be affected, but usually all the muscles of the body were involved. There were alternating periods of consciousness and unconsciousness (chart C), the consciousness extending from the moment that the convulsions had ceased to about the middle of the period of the stoppage of the heart beat, in all about 8 to 10 seconds, when unconsciousness would suddenly ensue. The mind was perfectly clear during consciousness, the patient would at times keep up an animated talk, would cease suddenly upon losing consciousness, to again take up the thread of the conversation upon the return of consciousness. The transition from the one state to the other was very rapid.

The colour and general appearance of the face presented marked and rapid changes (chart D). When the convulsive movements commenced there was a death-like pallor upon the face, which, as the convulsions increased in force, gave place to an intense suffusion which lasted a second or two, until the convulsions ceased, when the face assumed its normal aspect. It remained normal for a few seconds, that is, until about two seconds after the heart had ceased to beat, when it took on a constrained look and became pale, the paleness deepening into a death-like pallor lasting from 6 to 8 seconds.

The respirations seemed to be but slightly altered, the respiratory movements continued, with only a slight alteration in their force, while the heart was not beating.

Thus, every few seconds, there would be a rapid transition from a state of life, with normal colour, complete consciousness and mental activity, and regular pulse (chart II.), to a state of apparent death, with death-like pallor of the face, absolute unconsciousness, loss of superficial reflexes, and stoppage of the action of the heart (chart I). The change from apparent death to life was preceded by convulsions.

For four hours this extraordinary irregularity of the heart's action, with the associated symptoms, kept up, and terminated just as suddenly as it had commenced. The complete cycle of events occurred, at first, on the average three times a minute, but later on became less frequent. The treatment given was large doses of spr. ætheris co. by the mouth and strychnine, gr. 1-60, hypodermically every two hours. During the subsequent 36 hours the patient had only two very slight attacks, but on August 20th, the arrhythmia commenced again, and lasted with great severity for two hours and a half. His limbs then became very cold, the intervals of rest and consciousness were much shorter, the heart's action was becoming weaker, and the man was apparently dying. Doctor A. A. Browne saw the patient in consultation, and was much interested as the man's condition was unique in his experience.

The cessation of symptoms ceased, however, as suddenly as on the former occasion, and the patient rapidly regained warmth and vitality.

On the 21st there were no attacks, the pulse being full and regular. During the night, however, he was very restless, and a few convulsions occurred. He suffered from much abdominal distention and flatulency, which was greatly relieved by a mustard emetic. For the following three days he had slight attacks from time to time, on two occasions the fact of my entering the room seemed to precipitate rather severe attacks though he had been free from them for several hours before. From the 25th to the 31st he was entirely free from attacks, and gained strength gradually, his diet having been very much increased. On the latter date, he partook of rather a heavy meal, including some pastry, and during the following night had several severe attacks, but these proved to be the last ones, for with careful attention to diet and exercise he completely regained his former vigour, and returned to his office on the 14th of October.

The treatment consisted in morphia $\frac{1}{4}$-$\frac{1}{2}$ gr. hypodermically morning and evening: tr. nucis vomicæ, m xx, t.i.d.; and spr. ætheris co. whenever the attacks came on. The diet was restricted to liquids and the bowels kept loose by salines.

The cause of this disturbance of rhythm was probably, in the first place, an acute dilatation of the heart from sudden over-exertion, and later on to the blow upon the head, associated with flatulency, etc., but why the disturbance should take on such a curious form is not easily explained.

The reasons for the associated symptoms seem, however, to be clear, for the stoppage of the heart's action, even though respiration may have been going on, produced a venosity of the blood which irritated the centres of the medulla and motor areas, set up convulsions and thus stimulated the heart to act.

May 10th, 1902. The patient has been perfectly well up to this date, with the exception of a slight gastric disturbance associated with an unusually slow pulse (34 per minute) which lasted about two weeks. He walked to this office daily, and with the exception of the mental worry over the rate of the pulse, which he was frequently counting, he experienced no inconvenience.

THE CANADA MEDICAL ACT.

Passed by House of Commons, 1902, Bill No. 11.

An Act to provide for the establishment of a Medical Council in Canada.

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. This Act may be cited as *The Canada Medical Act*, 1902.

2. In this Act, unless the context otherwise requires :—

(*a*) The expression "medicine" shall be held to include surgery and obstetrics, and to exclude veterinary surgery, and the expression "medical" shall be held to include "surgical" and "obstetrical."

(*b*) The expression "Provincial medical council" includes "Provincial medical board" and "College of Physicians and Surgeons."

(*c*) The expression "medical school" includes any institution wherein medicine is taught.

(*d*) The expression "students" means only persons admitted to the study of medicine in virtue of Provincial laws.

3. The persons from time to time appointed or elected, or otherwise being, under the provisions of this Act, members of The Medical Council of Canada, are hereby constituted a corporation under the name of "The Medical Council of Canada," hereinafter called "the Council."

4. The purposes of the Council shall be to promote and effect—

(*a*) the establishment of a qualification in medicine, such that the holders thereof shall be acceptable and empowered to practice in all the Provinces of Canada ;

(*b*) the establishment of a register for Canada of medical practitioners and the publication and revision from time to time of such register ;

(*c*) the determination and fixing of the qualifications and conditions necessary for registration, including the courses of study to be pursued by students, the examinations to be undergone, and generally the requisites for registration ;

(*d*) the establishment and maintenance of a board of examiners for examination and for the granting of certificates of qualification ;

(*e*) the establishment of such a status of the medical profession in Canada as shall ensure recognition thereof in the United Kingdom, and enable Canadian practitioners to acquire the right to registration under the Acts of the Imperial Parliament known as the "Medical Acts;"

(*f*) the enactment, with the consent and at the instance of the medical councils of the various Provinces of Canada, of such Provincial legislation as is necessary to supplement the provisions of this Act and to effect the foregoing purposes.

5. The Council may acquire and hold such real estate and personal property as is necessary and expedient for the purposes of the Council or of providing a revenue therefor, and may sell, lease or otherwise dispose thereof; but the annual value of the real estate owned by the Council and held for the purposes of revenue only shall not at any time exceed the sum of twenty-five thousand dollars.

6. The Council shall be composed of :—

(*a*) one member from each province, who shall be appointed by the Governor in Council;

(*b*) members representing each Province, their number being fixed in such case according to the number of practitioners registered under the law of the Province, in the following proportions:—

For the first 100, or fraction thereof............	One
For the second 100, or fraction thereof over one-half	One
After the first 200, for each succeeding 600, or fraction thereof over one-half.....................	One

the elected members representing each province shall be elected—one by the Provincial medical council, and the others by the duly registered medical practitioners having received a license or certificate of registration within the province under regulations to be made in that behalf by the Provincial medical council ; provided that it shall not be competent to any Provincial medical council, or the regular practitioners of any province, to elect any person as a member of the council who is in any wise connected with the teaching staff or governing board of any university or incorporated medical school which is under the provisions of this Act entitled to elect a member of the council, nor shall it be competent to them to so elect any person belonging to any such particular and distinct school of practice of medicine as is mentioned and intended by paragraph (*d*) of this subsection ;

(*c*) one member from each university or from any incorporated medical college or school, in Canada having an arrangement with a university for the conferring of degrees on its graduates, engaged in the active teaching of medicine, who shall be elected by the university or by such college or school under such regulations as may appertain.

(*d*) three members, who shall be elected by such practitioners in Canada as, by the law of the Province wherein they practice, are now recognized as forming a particular and distinct school of practice of medicine, and, as such, are by the said law entitled to practice in the province;

2. No one shall be a member of the Council unless he—

(*a.*) resides in the Province for which he is an appointed or elected member;

(*b.*) is a duly registered member of the medical profession according to the law of the Province which he represents;

(*c.*) is duly registered as a medical practitioner in the register established under the provisions of this Act; but this qualification shall not be required of any of the members originally composing the Council;

3. No Province shall be represented upon the Council either by appointed or elected members until the Legislature of the Province has enacted in effect that registration of the Council shall be accepted as equivalent to registration for the like purpose under the laws of the Province ; and when all the Provinces of Canada have legislated in effect as foresaid, it shall be lawful to appoint and elect, in the manner aforesaid, the members of the Council.

Provided, however, that if any of said legislatures afterwards repeals its legislation contemplated by this section, no more persons shall be given the right to practice medicine within the jurisdiction of such legislature, by reason of their qualification or registration under this Act.

7. The term of office for appointed members shall be four years.

2. Members elected by Provincial medical councils shall remain in office during the term of office of the members of the medical council of the Province for which they are elected.

3. All other members shall be elected for four years.

4. Any member may at any time tender his resignation by written notice thereof to the president or to the secretary of the Council. Upon the acceptance of such resignation by the Council, the Council shall forthwith give notice in writing thereof, in case of an appointed member to the Secretary of State of Canada, and, in case of an elected member, to the secretary of the medical council for the Province, or to any university, incorporated medical school or college, or to the president or the secretary of any recognized distinct school of practice of medicine represented, which such member represents.

5. Any person who is or has been a member may, if properly qualified, be re-appointed or re-elected; but no person shall at one time serve as a member in more than one capacity.

6. In the case of members of the Council whose term of office is about to expire, successors may be appointed or elected at any time within three months before the expiration of such term; provided that where any vacancy exists in the membership of the Council, by reason of any term of office having expired or otherwise, such vacancy may be filled at any time.

7. If there has been a failure to elect a member of the Council, or to elect a properly qualified member, or to cause the name of the member elected to be certified to the secretary of the Council within a reasonable time after such election might have been made, then, after notice from the Council, requiring the Provincial medical council, or such incorporated medical school or college or university, or the recognized distinct school of practice of medicine, to cause such election to be made and to certify the result thereof to the Council within one month from the date of service of such notice, the Council may, in case the default continues, itself elect such member.

8. A member appointed or elected to fill a vacancy, caused by death or resignation shall hold office in all respects as the person in whose place he is appointed or elected would have held office, and for the remainder of the term for which that person was appointed or elected.

9. All members appointed or elected shall continue in office until their successors are appointed or elected or until the expiration of their term of office if their successors are appointed before the expiration of such term of office.

8. The Council may from time to time—

(*a.*) elect from among its members a president, a vice-president and an executive committee;

(*b.*) appoint a registrar, who may also, if deemed expedient, act as secretary and treasurer;

(*c.*) appoint or engage such other officers and employees as the Council deems necessary to carry out the objects and provisions of this Act;

(*d.*) require and take from the registrar, or from any other officer or employee, such security for the due performance of his duty as the Council deems necesssary;

(*e.*) fix the allowances or remuneration to be paid to the president, vice-president, members, officers and employees of the Council.

9. The Council shall hold its first meeting at the city of Ottawa, at such time and place as is appointed by the Minister of Agriculture; and, thereafter, an annual meeting of the Council shall be held at such a time and place as is from time to time appointed by the Council.

2. Until otherwise provided by regulation of the Council, twenty-one members of the Council shall form a quorum, and all acts of the Council shall be decided by a majority of the members present.

10. The Council may make regulations not contrary to law or to the provisions of this Act, for or with reference to—

(*a.*) the purposes mentioned in paragraphs (*a*), (*b*), (*c*), (*d*) and (*e*) of section 4 and in section 8 of this Act ;

(*b.*) the direction, conduct and management of the Council, and of its property;

(*c.*) the summoning and holding of the meetings of the Council, the times and places where such meetings are to be held, the conduct of business thereat, and the number of members necessary to constitute a quorum;

(*d.*) the powers and duties of the president and vice-president, and the selection of substitutes for them if unable to act for any cause at any time;

(*e.*) the tenure of office, and the powers and duties of the registrar and other officers and employees;

(*f.*) the election and appointment of an executive committee and of other committees for general and special purposes, the definition of their powers and duties, the summoning and holding of their meetings, and the conduct of business by such committee;

(*g.*) generally, all fees to be required, paid or taken under this Act;

(*i.*) the establishment, maintenance and effective conduct of examinations for ascertaining whether the candidate possesses the qualifications required ; the number, nature, times and modes of such examinations ; the appointment of examiners ; the terms upon which matriculation and other certificates from universities, schools and other medical institutions shall be received as evidence of qualification; the dispensation of candidates from undergoing examinations, either wholly or partially ; and generally all matters incident to such examinations or necessary or expedient to effect the objects thereof ;

Provided, however, that—

(i.) the requirements of any curriculum established by the Council, shall not, at any time, be lower than the requirements of the most comprehensive curriculum then established for the like purpose in any Province;

(ii.) the standard of examination, shall not, at any time, be lower than the highest standard for the like purpose then established for ascertaining the qualification for registration in any Province ;

(iii.) the possession of a Canadian university degree alone, or of a certificate of Provincial registration founded on such possession, obtained subsequent to the date when this Act shall have become operative, as provided in subsection 3 of section 6, hereof, shall not entitle the possessor thereof to be registered under this Act ;

(iv.) no retroactive effect shall be given to this Act, and especially as regards persons duly inscribed as students under the laws of any of the Provinces of Canada at the time it shall become operative as aforesaid."

(*j*) the recognition of licenses granted by any British, Canadian, colonial or foreign licensing body or authority; the arranging and bringing into effect of any schemes of reciprocity as to registration with any British, colonial or foreign medical licensing body or authority; the terms and conditions upon which, and the circumstances under which, medical practitioners shall be entitled to registration under this Act in cases where such medical practitioners are duly registered or licensed under the Medical Acts of the United Kingdom, or under the laws of any British possession other than Canada, or under the laws of any foreign country, which British possession or foreign country extends reciprocal advantages to Canada;

(*k.*) the enrolment and registration of all persons entitled under this Act to appear on the register for Canada of medical practitioners ;

(*l.*) generally, all matters which it is necessary or expedient to provide for or regulate in pursuance of the purposes of this Act and in furtherance of its general intention.

2. No regulation made under the authority of this section shall have effect until approved by the Governor in Council, and such approval shall be conclusive evidence that the regulation has no retroactive effect.

11. A copy of any such regulation certified by the registrar or secretary under his hand and the seal of the Council, may be received in evidence in any court of justice without proof other than the production of a copy purporting to be so certified.

12. The Council shall enact such regulations as shall secure to practitioners who, under the laws of any Province, are now recognized as forming a particular school in the practice of medicine, and to all applicants for registration who desire to be practitioners of such school, rights and privileges not less than those now possessed by them under the laws of any Province, and under the regulations of any Provincial medical council.

13. At each annual meeting of the Council, the Council shall appoint a board of examiners, to be known as "The Medical Council of Canada Examination Board," whose duty it shall be to hold the examinations prescribed by the Council, subject to the provisions of section 12 of this Act.

2. The members of the board of examiners shall be eligible for reappointment.

14. The subjects of examination shall be decided by the Council, and candidates for examination may elect to be examined in the English or French language; and the examinations shall be held only at those centres at which there is a university or college actively engaged in the teaching of medicine and having hospital facilities of not less than one hundred beds.

15. The Council shall cause to be kept by the registrar, under the direction of the Council, a book or register to be known as " The Canadian Medical Register," in which shall be entered, in such manner and with such particulars as the Council directs, the names of all persons who have complied with the requirements of this Act and with the regulations made by the Council respecting registration under this Act, and who apply to the registrar to have their names so entered.

16. Every one who passes the examination prescribed by the Council, and otherwise complies with all the conditions and regulations requisite for registration as prescribed by this Act and by the Council, shall, upon payment of the fees prescribed in that behalf, be entitled to be registered as a medical practitioner.

2. Any person who has received a license or certificate of registration previous to the date when this Act shall have become operative as aforesaid, and who has been engaged in the active practice of medicine in any one or more Provinces of Canada, shall, after six years from the date of such certificate, be entitled to be registered under the Act as a medical practitioner, without examination, upon payment of the fees and upon compliance with the other conditions and regulations for such cases prescribed by the Council.

3. Any person coming within any of the classes of registered or licensed practitioners to which paragraph (*j*) of section 10 of this Act applies shall be entitled to be registered upon complying with the orders and regulations established by the Council in that behalf.

17. Any entry in the register may be cancelled or corrected upon the ground of fraud, accident or mistake.

18. In any case of an application for registration or for correcting or amending any entry upon the register, the applicant, if aggrieved by the decision of the registrar, may appeal to the Council, and the Council shall hear and determine the matter; but all applications to cancel or strike off entries from the register made adversely to the person whose registration it is desired to affect shall be by the registrar referred to the Council, and the Council, shall, after three months' notice sent by post, prepaid and registered, to the last known address of such person, who shall have the right to appear by counsel, hear and determine all such applications.

19. If it is made to appear to the Council, after inquiry, that any person registered under this Act has been convicted, either in any part of His Majesty's possessions or elsewhere, of an offence which if committed in Canada would be an indictable offence under *The Criminal Code*, 1892, and its amendments, or that he has been guilty of infamous or disgraceful conduct in a professional respect, then, whether such offence has been committed, or such conviction has taken place, or such infamous or disgraceful conduct has occurred, either before or after the passing of this Act, or either before or after the registration of such person, the Council shall, after three months' notice sent by post, prepaid and registered, to the last known address of such person, who shall have the right to appear by counsel, direct the registrar to erase the name of such person from the register: Provided, however, that if a person registered under this Act has likewise been registered under the laws of any Province, and such provincial registration has been cancelled for any of the causes aforesaid by the authority of the medical council for that province, the Council shall then, without further inquiry, direct the registration of such person under this Act to be cancelled.

2. The name of a person shall not be erased under this section—

(*a.*) because of his adopting or refraining to adopt the practice of any particular theory of medicine or surgery; or

(*b.*) because of his conviction out of His Majesty's possessions of a political offence against the laws of any foreign country; or

(*c.*) because of his conviction for any offence which, though coming within the provisions of this section, is, in the opinion of the Council, either from the trivial nature of the offence or from the circumstances in which it was committed, insufficient to disqualify a person from being registered under this Act.

20. Whenever it is made to appear to the Governor in Council that any of the provisions of this Act are not complied with, the Governor in Council may empower the commission of arbitration hereinafter provided for, to inquire in a summary way into and report to him whether such is the case and, if so, to prescribe what remedies are necessary, if any.

2. The Governor in Council shall require the Medical Council of Canada to adopt the said remedies within such time as he, having regard to the report of the commission, thinks fit to appoint. In default of the Council so doing, he shall by Order in Council amend the regulations, or make such provision or order as he deems necessary to give effect to the decision of the commission.

3. The commission of arbitration shall be composed of three members, one to be appointed by the Governor in Council, one by the Medical Council of Canada, and the third by the complainant.

4. The commission may compel the attendance of witnesses and examine them under oath and require the production of books and papers, and shall have such other necessary powers as are conferred upon it by the Governor in Council for the purposes of the inquiry.

21. This Act shall not be interpreted as authorizing the creation of medical schools, or otherwise giving medical tuition.

RETROSPECT

OF

CURRENT LITERATURE.

Gynaecology.

UNDER THE CHARGE OF WILLIAM GARDNER.

Hysterectomy.

Bouilly, G. "De l'hysterectomie pour fibromes." *La Gynécologie, Oct., 1901.*

Surgeons are divided into two camps upon the question of indications for operating in cases of uterine fibroids. One school teaches that all uterine fibroids ought to be removed, while the other claims that no operation is justifiable unless the tumours are giving rise to serious symptoms. • Bouilly never performs a hysterectomy upon a patient who has a fibroid of the uterus, unless the tumour has become a cause of uneasiness or pain, or else a menace to the general health. The more serious operation is also called for where either the age of the patient, or size of the growth, render any less heroic treatment of no avail.

From October, 1899, to the end of July, 1901, Bouilly has performed hysterectomy for fibroids 116 times, 94 abdominal and 22 vaginal. In the 94 patients upon whom the abdominal operation was performed, the youngest was 23 and the oldest 59 years. The size of the growth varied from 350 grammes to 14 kilogrammes. The appendages were diseased in one-sixth of the cases, pyo- or hæmato-salpinx and ovarian cystomata or hæmatomata being present. In three cases these structures were adherent to the surrounding parts.

Excessive size of the tumour militates against a good post-operative prognosis; firstly, on account of the stripping of a large extent of peritoneum, and secondly, from the disturbance in the intra-abdominal pressure caused by the removal of so large a mass of tissue.

Only four times was toal hysterectomy performed, and then for some complication:—once for coexistent epithelioma of the cervix and fibroma of the body, and three times because the tumour had effaced the cervix by a downward prolongation. The vagina was subsequently closed over in each case. The results in the 116 cases were as follows:

Cures	110
Deaths—	
Abdominal	5
Vaginal	1
Total mortality	5.1 per cent.

Of the fatal cases, two deaths were from septicæmic infection taking place during the operation; one was in the case of a sloughing fibroid; the fourth was where the patient had a large tumour and was cachectic before operation; the fifth patient had a tumour weighing 14 kilos and died on the 18th day after operation from paralysis of the bowels; and the sixth death was from total suppression of urine.

Uterine Cough.

LEON-ARCHAMBAULT, L. "La toux uterine et son traitment." *La Gynécologie, August, 1901.*

Involuntary muscles are supposed to be more often affected by spasm than those which are under our control. This is frequently observed in women, where disease of the uterus, apart from any hysterical manifestation, causes cough. The cough which is symptomatic of uterine disease is dry, laryngeal and husky. It is not the loud cough of bronchitis nor the strident cough of whooping cough. It may or may not be frequent; with some it has exacerbations or is intermittent like its cause. For example, when it is due to an anteversion, it ceases on lying down.

The common causes are prolonged use of the voice, cold, dust, the menses, emotions and coitus. Müller noted spasm of the larynx upon ligaturing the pedicle of a uterine fibroid. This nervous cough is seen in diseases of the liver, uterus, or testicle, and also in some people on exposure to cold, or simple stimulation of the skin. Thus, when a nervous cough is so easily set up, it is not surprising that it should be found among women, and take its origin from the generative organs on account of their innervation and their importance to the individual.

It can be explained by the richness of the nerve supply of the female generative system, its connection with the solar plexus and the great sympathetic.

It is possible that it may occur among those predisposed to it, but it is certain that in many cases "one finds a cause, a pathological condition, an old or recent affection, which provokes it and explains it at the same time."

As an argument against hysteria being the only cause of nervous cough, one may cite the cough of pregnancy, this being often seen in the beginning of pregnancy when the uterus is enlarging.

Some deviation of the uterus, especially anteversion, is the most frequent cause of uterine cough, as is shown in the case of Malachi's, where the patient had an anteflexion, the relief of which by a pessary was followed by the cessation of the cough.

Prolapse of the Internal Genitalia.

Mandelstamm, M. "Contribution a l'étude du traitement chirurgical des prolapsus considérables du vagin et de l'uterus." *La Gynécologie, Aug., 1901.*

Descent of the vagina and uterus has three causes, *viz.*:—

(1) Relaxation of tissues.

(2) Increased pressure from above.

(3) Diminished resistance from below.

The first cause is loss of elasticity of the ligaments of the uterus, as well as in the relaxation or disappearance of the cellular tissue which lies between the uterus, vagina and the other pelvic organs, especially the bladder and rectum.

The second is produced in uncomplicated cases by efforts exerted during labour, difficult defæcation, lifting heavy objects, etc., while the tears of the peritoneum and cervix and senile atrophy cause diminution in strength of the supports from below.

Until recently all efforts have been directed towards increasing the strength of the pelvic floor by narrowing the vagina and building up the perineal body, but during the last ten years, seeing that all three factors in producing these displacements are usually present in each case, efforts have been made to strengthen all of the enfeebled pelvic tissues.

To prevent the descent of the uterus, it is necessary to place and keep that organ in the position of physiological anteflexion by shortening and strengthening its ligaments, and by its artificial fixation to a certain place. One meets, however, cases which are too aggravated for the above and in which total hysterectomy is indicated.

Instead of removing the uterus in these severe cases, Freund excoriates the anterior vaginal wall, as well as both surfaces of the cervix. He then brings the fundus down into the vagina through an incision in the pouch of Douglas. An artificial os having been made in the fundus, its posterior surface (which has now become its anterior) is sutured to the anterior vaginal wall, thus lifting it up. This procedure is supplemented by Tait's perineorrhaphy, and it is claimed by its originator to be followed by fewer recurrences than the usual plastic vaginal operations for procidentia uteri. *F. A. Lockhart.*

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in the department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

(Received up to May 10th, 1902.)

Canada Medical Record (Montreal).

February, 1902.

1. Retrospect of Laryngology. Geo. T. Ross.

March, 1902.

2. Notes from the Case-book of a General Practitioner. W. F. Campbell.
3. Three Cases of Grave Injury to the Eye-ball with Ultimate Recovery of Useful Vision. Geo. H. Mathewson.
4. Abstract of Several Papers Recently Published by William S. Gottheil, M.D., of New York.

3. MATHEWSON relates the histories of three interesting cases and concludes that the surgeon should not be too hasty in deciding to enucleate a wounded eye, even if the wound be large and vision bad. The condition should be treated for some days expectantly, always being on the lookout for "shrinking tenderness" to touch, which is the chief danger signal in these cases as it proves the existence of iridocyclitis in the injured eye. In one of his cases, filling the globe with saline solution undoubtedly saved the eye, as it made possible an exact coaptation of the lips of the wound, which could not have been had in the previous collapsed condition of the globe.

La Revue Medicale du Canada (Montreal).

5, Février.

1. Le Chloral comme Vesicant. M. T. Brennan.

12, 19, Février.

2. Syphilis Tertiare : Observation. Jehin-Prume.

26, Février.

4. De L'Emploi de L'Huile d'Olive Sterelisé dans les Operations Abdominales. M. T. Brennan.

5, 12, Mars.

4. Gymnastique sans Appareils. M. P. E. Prevost.

19, 26, Mars.

5. Les Alienes au Canada. E. P. Chagnon.

1. Brennan recommends chloral hydrate as a vesicant when a marked effect is rapidly required. It is better than cantharides and has none of its disadvantages. With children, next to iodine, it is the counterirritant of choice. The blister will produce whatever action is desired, erythema, vesication or ulceration.

2. Jehin-Prume strongly urges the free use of the cyanide of mercury, subcutaneously or intra-venously, in the treatment of the severe forms of syphilis. He cites several cases thus treated with marked success, that had shown no improvement whatever under the ordinary routine treatment with pills, ointments, etc.

3. Brennan believes that the free use of sterilized olive oil in abdominal operations will prevent the formation of abdominal and pelvic adhesions.

4. Prevost describes and illustrates by drawings the various exercises that may be used without the use of apparatus for increasing muscular development.

5. Chagnon shows by tables that there has been a constant increase from year to year in the number of persons treated in the asylums for the insane in Canada, and that it is an actual increase, and not due to the increase in the population. During the period 1871-1881, there was an increase of 5 per 10,000 of the population, during the period 1881-1891, an increase of 5 per 10,000, and during 1891-1901, and increase of 3 per 10,000.

Le Bulletin Medicale de Quebec (Quebec).

Mars, 1902.

1. De L'Anévrysm Aortique, Type Récurrent Laryngé. D. Brochu.

1. Brochu contributes an exhaustive study on aortic aneurism.

The Canadian Practitioner and Review (Toronto).

March, 1902.

1. A Case of Intussusception in a Child, Operation, Recovery. A Primrose.
2. A Case of Perforation of the Bowel in Typhoid: Operation: Recovery. Followed by Subphrenic Abscess: Operation: Recovery. Herbert A. Bruce.
3. Gastro-Enterostomy in Pyloric Obstruction: A Case. Alex. McPhedran.
4. Report of a Case in Practice. Charles F. Neu.

April, 1902.

5. Smallpox and Vaccination. John Cavan.
6. Vaginal Section,—Exploratory and Operative. T. Shaw Webster.

1. Primrose points out that in cases of intussusception early operation holds out the greatest prospect of recovery for the patient, and that it should take the form of laparotomy rather than any such measures of doubtful utility as inflation per rectum with air or fluid. He cites a case of operation followed by recovery. The intussusceptum proved to be the transverse colon which had become invaginated into the splenic flexure of the colon.

2. Bruce related the history of a case of typhoid in which perforation occurred on the fourteenth day of the disease. Laparotomy was done and a small perforation found about ten inches from the cæcum. There was marked general peritonitis, and about a pint of sero-purulent fluid in the peritoneal cavity. The ulcer was turned in by means of a double row of Lembert's sutures, and the peritoneum was flushed out by hot salt solution. The cavity was drained by iodoform gauze. Some time after the operation a large subphrenic abscess formed, but was opened and drained. The patient was perfectly well three months after the first operation.

3. McPhedran reports a case of pyloric obstruction for which gastro-enterostomy was performed.

5. Cavan, in the course of a paper on smallpox and vaccination, describes the methods employed by a number of manufacturing establishments to gather and prepare the lymph. He points out, from the experience of its use and from the bacteriological examination, that the glycerinated lymph is very greatly superior to the dry points.

6. Webster discussed two quite different operations for the relief of pelvic diseases exterior to the uterus. First, the opening of the abdomen through the cul-de-sac of Douglas, and second, an extra peritoneal method, dissection from the vagina upwards between the folds of the broad ligament to the seat of the disease.

The Canada Lancet (Toronto).

March, 1902.

1. A Case of Fusiform Dilatation of the Œsophagus without Intrinsic Stenosis. A Case of Œsophagotomy for Foreign Body, Recovery. George A. Peters.
2. A Case of Graves' Disease Treated by Thyroidectomy. J. T. Fotheringham and Geo. A. Bingham.

3. A Case of Perforation of the Bowel in Typhoid: Operation: Recovery. Followed by Subphrenic Abscess: Operation: Recovery. Herbert A. Bruce.
4. The Value of General Reading to the Young Practitioner. H. S. Hutchison.
5. Recurrent Gastritis—Gastro-Enterostomy. Ernest Hall.
6. A Case of Otalgia. B. F. Butler.

April, 1902.

7. How to Live to Prolong Life. Sir James Grant.
8. Diagnostic and Therapeutic Uses of the Roentgen Rays. Jas. Third.
9. Infection and Contagion. E. B. Shuttleworth.
10. Multiple Uterine Fibroids Complicated by Fœtus. John M. Macdonald.
11. A Case of Jacksonian Epilepsy. Frank W. Hall.
12. Notes on Beri Beri. Colin A. Campbell.
13. Cardiac Complications of Gonorrhœa. H. B. Anderson.

1. PETERS relates the history of a man suffering from dilatation of the œsophagus, which was due to constriction of the œsophagus produced by the hypertrophied condition of the pillars of the diaphragm, with or without a degree of spasm in that muscle. Section of the œsophagus at the point of constriction showed that there was no malignant or cicatricial tissue whatever, and that the circular muscular fibres seemed to be mechanically accumulated but not hypertrophied. The pillars of the diaphragm were exceedingly strongly developed. The left crus, supplemented by that portion of the right which crosses between the œsophageal and aortic openings was particularly strongly developed, and was not less than five-eighths of an inch in thickness at a point opposite the œsophageal opening.

Peters also relates the history of a case in which he performed œsophagotomy for the removal of a small vulcanite plate bearing one tooth that had been swallowed. Its position was detected by means of an X-ray photograph, which showed the plate lying at a short distance above the sternal notch.

2. FOTHERINGHAM and BINGHAM relate the history of a case of Graves' disease cured by operation. The thyroid gland was enlarged bi-laterally, both lobes and especially the isthmus being involved. The whole mass was removed except a small apparently healthy lobule situated at the upper part of the right lobe. Two interesting features occurred in the progress of the case after operation. First, an accession of a severe attack of acute Graves' disease on the following day, when the pulse ran 140 to 170, and the temperature 103°. There

was much shock, but these symptoms soon disappeared. The other feature was aphonia, with occasional lapses into phonation particularly during the night. The cords lay in a typically cadaveric position, so that the recurrent laryngeal nerve, though not divided at the operation, must have been roughly handled. The girl was practically well seven weeks after operation.

5. HALL relates the history of a case of recurrent gastritis and pyloric obstruction relieved by gastro-enterostomy.

6. BUTLER gives notes of a case of otalgia of dental origin.

8. THIRD discusses the diagnostic and therapeutic value of the Roentgen rays when properly applied.

13. ANDERSON gives the history of a man, 24 years of age, whose illness with cardiac symptoms and signs of septicæmia, followed a typical attack of what was recognized clinically as gonorrhœa, and that innumerable organisms corresponding in morphology, distribution, and staining reactions to the gonococcus were found in smears from the vegetations and blood of the left ventricle. The patient's death was undoubtedly the result of a systemic infection, with ulcerative endocarditis and pericarditis, of urethral origin and due to gonococcus.

The Canadian Journal of Medicine and Surgery (Toronto.)

April, 1902.

1. Transplantation of Ureters into the Rectum for Exstrophy of the Bladder—by the Author's Extra-Peritoneal Method.—Three Additional Cases. George A. Peters.
2. Sewage Purification. P. H. Bryce.
3. Pus in the Kidneys: Its Pathological Basis and Its Treatment. Thomas H. Manley.
4. An Appreciation of Pryor's Method of Removing the Fibroid Uterus by the Abdomen. Lapthorn Smith.

May, 1902.

5. Experiments in Climatology—The Canadian Summer. Ezra H. Stafford.
6. Vaginal Section—Exploratory and Operative. T. Shaw Webster.
7. On Some Medical Facts and Usages Among the Indians and French Canadians. W. L. T. Addison.

1. PETERS gives the notes of three cases of exstrophy of the bladder which had been submitted in the operation described by him in the *British Medical Journal*, June 22nd, 1901. The results have been very satisfactory in two of the cases, but operation in the third was followed by death on the fifth day, from acute ascending infection.

Dominion Medical Monthly (Toronto).

March, 1902.

1. Duties of a Nurse in Abdominal Surgery. Herbert A. Bruce.
2. Vomiting in Infancy and Childhood. B. E. Hawke.
3. The Anatomical Factor in the Production of Baldness. G. Elliott.

April, 1902.

4. Differential Diagnosis of Smallpox. James Patterson.
5. The Ethics of the Medical Profession. H. P. Elliott.

3. ELLIOTT points out that baldness occurs on the top of the head, and rarely if ever extends below the temporal ridges laterally, or even down to the superior curved lines of the occipital bones, posteriorly. Baldness extends lower in the middle line behind than it does an inch or so on either side of the middle line, posteriorly. This corresponds to the fact that there are no muscular fibres in the middle line of the occipito-frontalis muscle at its attachment to the external occipital protuberance, and the adjacent parts of the superior curved lines. The skin of the scalp, therefore, overlying the epicranial aponeurosis, has no underlying muscle to exercise it, and has only to depend upon the action of the occipito-frontalis muscle, to which it is closely adherent, and only moves when that muscle is put into action. In no other region of the body is there such an extensive area of skin which does not receive adequate exercise either through underlying or adjacent muscles. Although the scalp is very vascular, the function of the hair papillæ may be stunted by the slow return flow through the veins and lymphatics. There is no active muscular exercise in the part whatever, to hurry along the waste products and deoxygenized blood in the vessels. These structures being superficial and easily compressible, their compression by the rim of the hat will further retard their flow.

Baldness does not occur in the female sex to anything like the extent that it does in the male, and this may be due to the scalp being well exercised by the combing, plaiting, and the throwing from side to side. Women suffer from dandruff equally with men. Massage, therefore, the writer thinks is the essential treatment for baldness, and that it should be begun in early life. If the scalps of men received as much exercise as the scalps of women, there would be on the vaults of their craniums a luxuriant tonsure.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, January 17, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Drs. G. K. Grimmer and H. R. D. Gray, of Montreal, were elected Resident Members.

Subdiphragmatic (?) Abscess.

Dr. H. A. Lafleur gave the following account of a case of difficult diagnosis:—

A young man aged 24 years, came to me complaining that he had been spitting mucus for some years and that on December 27th, he had noticed that there was a considerable amount of blood in the expectoration. The next day he again spat up blood, and again on January 4th. He came to see me on the 8th and I obtained the following history :—

He had been spitting up mucus for a very long time, and occasionally tinged with blood, but never quite as much as on these last occasions. Careful questioning failed to elicit any history of fever, chills or sweating ; he had not lost flesh, but weighed then 125½ pounds, his normal weight being 126 pounds. There was no history of pain, pleurisy or any gastro-intestinal disturbance.

I made a very careful examination of him but was unable to detect anything whatever in his lungs. He brought a specimen of sputum which was mucopurulent, but contained a very large admixture of blood. The first specimen looked like what one might expect to find in pulmonary hæmorrhage. I was not satisfied with my examination, although it seemed conclusive, and through the kindness of Mr. Watson of the Montreal General Hospital I made a fluoroscopic examination. No shadows were made out only a lessened excursion of the diaphragm on the right side on deep inspiration. It moved only the width of one intercostal space, instead of two or three. There appeared also to be an irregularity in its shadow, which instead of being horizontal and gradually tapering down, showed a little elevation at about the middle part of the curve. I searched two or three specimens of sputum, and made several preparations, but failed to find any tubercle bacilli or elastic tissue fibres. The urine was negative and contained no casts, pus, albumin, sugar or blood, although of somewhat high specific gravity. The blood showed a full hæmoglobin value, red cells 4,500,000, and only 3,400 leucocytes to the ccm.

Being still in doubt and expecting deep seated abscess I again examined him on the 12th, and then I thought I detected in the right lower axillia, between the anterior and posterior axillary lines an area of impaired resonance, of a crescentic shape. This appeared to be more obvious when he was lying down, than when sitting or standing. Perhaps there was a little impairment of the breath sounds, and now and then one heard a crepitant râle on deep inspiration, and following cough.

I labelled this case provisionally a subdiaphragmatic abscess discharging through a bronchus, the pus which he coughs up being very homogenous and viscid. A specimen of the pus was shown.

Dr. Lapthorn Smith stated that if this was a subdiaphragmatic abscess, he would like to know where it started from, and whether it would be tuberculous in origin. Also how it was walled off, and why it was not a collection of pus in the lung, and how one is to know whether a small quantity of pus is above or below the diaphragm.

Dr. Macdonald would like to ask Dr. Lafleur what was the character of the expectoration as far as he had seen, as he had himself seen the patient about three weeks previously, and at that time, so far as could be made out from his narrative, he was spitting up pure blood.

Dr. W. F. Hamilton was very much interested in Dr. Lafleur's case, and would like to confirm the statements which he made, that there was an area of dulness which was very appreciable, but that varied with deep inspiratory movement. This corresponded to what Dr. Lafleur had observed with the fluoroscope.

Dr. Lafleur in reply to Dr. Smith, said that he had already stated in his report of the case, that he had enquired into all possible causes of subdiaphragmatic abscess, and had been unable to find a single one, and also that there were no tubercle bacilli in the sputum. As to where and how the abscess arose he did not know. The sputum when he first saw it contained a larger admixture of blood than the specimen shown. It was distinctly purulent at the same time, and did not look at all like the sputum one ordinarily saw in a tuberculous hæmoptysis. There remained only one thing to do, so far as he could see, and that was, if the condition continued and the sputum remained blood stained, to do an exploratory puncture. He was not in a hurry however to do anything, but would wait.

Demonstration of Animals Operated on, with a consideration of their Significance for Medicine.

Dr. Wesley Mills showed two pigeons, in the first of which the semi-circular canals on one side had been destroyed on September 4th. It had been highly incoördinate but had recovered marvellously within a few weeks. All that remained of the incoördination was the carriage of the head to one side. Thinking it would be interesting to observe what would happen if the canals on the other side were also destroyed, this was done, and the condition was almost as bad as in a second pigeon (also shown), in which the canals of both sides were destroyed at the same time on January 4th. Yet, even in the last bird, there had been some improvement. The bird in which both canals had been destroyed at once was the worse of the two.

Dr. Mills also showed some cats and a rabbit in which he had divided the cervical sympathetic nerve. The effects produced by division of the sympathetic are contraction of the pupil, dilatation of the blood vessels, rise of temperature in the affected ear, more permanent in the cat than in the rabbit, lessening in the size of the palpebral fissure, enophthalmos, diminished ocular tension and loss of hair. The loss of hair is the least important and is purely a trophic effect. The contraction of the pupil is due to paralysis of the radiating fibres which are supplied by the sympathetic, the circular fibres which are supplied by the third nerve continuing to act. This may pass off in a few days in the rabbit, but in the cat, dog and man, it is permanent. The narrowing of the palpebral fissure is probably due to loss of tone in the unstriped fibres of the lids. The enophthalmos is explained by loss of tone in muscle fibres not usually recognized in works on anatomy, namely, unstriped muscle in the lining membrane of the orbits of the eye. When the sympathetic is stimulated, the lids open up and the globe comes forward. This effect, exophthalmos, goes far to prove that exophthalmic goitre has to do with an affection of the sympathetic nerve. It has been proposed (and carried out) to divide the sympathetic for exophthalmic goitre, and from the results obtained in these cats, the operation seems to be one worth trying.

Dr. Byers said that the diminution of tension which was commonly said to occur after division of the sympathetic had been made use of in practice in cases of glaucoma in which iridectomies and sclerotomies had failed to reduce the tension. In a large number of these cases in which this procedure had been adopted in Germany and France, the division of the sympathetic had produced the required effect.

Dr. Deeks thought that these interesting demonstrations of Dr. Mills went a long way to explain and exemplify certain cases met with in practice. He had seen, while abroad, a man in whom there was narrowing of the palpebral fissure and change in the pupils. Dr. Mills had stated this narrowing was not always permanent, and Dr. Deeks thought this could be explained by subsequent contracture, as in all parallel conditions paralysis was followed by subsequent contracture. The connection between exophthalmos and lesions of the sympathetic had been already pointed out, and hence the theory which the Germans held that exophthalmic goitre was due to a changed condition in the thyroid secretion causing irritation of the sympathetic ganglia.

Dr. Shepherd thought that the points with regard to excision of the sympathetic had been pointed out very often. The late Dr. R. L. Macdonnell had reported a case of aneurism causing pressure upon the sympathetic and showed the resulting conditions produced. Excision of the sympathetic in exophthalmic goitre was a very old operation, but it had never gained the confidence of the profession, perhaps for the reason that the causes of exophthalmic goitre were so very various. Exophthalmos was only a symptom of the disease and one often saw enlarged thyroids without any other symptoms of the disease or again exophthalmos secondary to enlarged thyroid and disappearing after excision of the thyroid.

Dr. Mills, in reply, thought Dr. Shepherd's remarks with regard to the real nature of exophthalmic goitre were most important, his demonstration only gave a possible explanation of one of the symptoms. With regard to Dr. Martin's case, it was necessary to remember that unstriped muscle tissue was a sort of primitive one in some animals and seemed to have a tonus of its own, so that plainly there was a power in the higher animals of falling back upon its latent resources, derived from its invertebrate ancestors.

Epilepsy, Apparently of Nasal Origin.

Dr. R. H. Craig read the report of this case. See page 284 of the April number.

Notes on the Bacteriological Examination of Milk.

Drs. Wyatt Johnston and F. B. Jones presented a paper with the above title. See page 124 of the February number.

Dr. Lapthorn Smith asked whether the microbes found in milk were of such a nature that there was any real cause for alarm in using the milk.

Dr. Robertson asked where the tubes for the bacteriological examination of milk could be obtained.

Dr. Johnston in reply to Dr. Smith said that the majority of bacteria in milk were harmless as regards pathogenic effects, some of them produce fermentation which rendered the milk undigestible, and this was well-known to be the main cause of summer diarrhœa in children, and there was a lamentably large mortality in the city in this respect.

The outfits for the examination would be kept at the Provincial Board of Health, and they could be returned there or to the Laboraotry of Hygiene at McGill University.

General Gonorrhœal Infection with Illustrative Cases.

Dr. W. F. Hamilton read a paper on this subject. See page 96 of the February number.

Dr. F. W. Gilday would like to hear an expression of opinion regarding the rest treatment. In a case referred to him, the knee was fixed at nearly a right angle, and the man was run down to about 100 pounds weight. He could not bear pressure, and could not stand anyone coming near him. He had been treated for four years. Fixation of the joint with plaster of Paris had resulted in the knee returning to its normal condition and the man's gaining 40 pounds in weight.

Dr. Lauterman thought it was most important that we should be familiar with the remote effects of gonorrhœa in the internal organs. He related a case in which a young man of 23 years, several months after he had had a urethritis, had come under his notice suffering from an endocarditis of the aortic valves. This was followed by an arthritis affecting one knee, and shortly after this suppuration of the ear, pure cultures of gonococci being derived from the pus. This again had been followed by an abscess in the temporo sphenoidal lobe and death. Unfortunately he was unable to procure an autopsy.

He also referred to a patient, in whom three attacks of erythema nodosum came on about the third day of a urethral discharge, and lasted until its termination.

Dr. Irving would like to hear something concerning the local treatment of these cases.

Dr. Robertson in females had noticed profuse sweating among the symptoms.

Dr. Hamilton, in reply, said that injections of a solution of protargol 1 in 4, and in severe cases of silver nitrate 1 in 4 were given. In the female plain water injections were used, sometimes medicated. Profuse sweating was not noticed in this case, although he had never seen a more severe one ; she had not had either hot air baths, which in some instances might account for the sweating.

Stated Meeting, February 7th, 1902.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Daily Medical School Inspection.

DR. RUTTAN read a paper on the advisability of introducing daily medical examination in schools.

DR. C. H. CHURCH read a paper entitled "Some observations on Conditions present in Schools of Montreal." (See page 182 of the March number.)

DR. R. TAIT MCKENZIE read a paper on the Influence of School Life on Curvature of the Spine." (See page 118 of the February number.

DR. J. A. HUTCHINSON referred to instances that had come under his observation as public health officer of Westmount, where infectious disease had been spread through the schools, and believed that many of them could have been prevented by an early diagnosis.

DR. A. D. BLACKADER expressed himself as strongly in favour of the daily medical inspection of schools, both on account of the lessening in the spread of infectious disease, and the detection of chronic diseases and those which had to do with fatigue and debility. Having an inspector making daily rounds and referring those in need of treatment to their parents, would educate the public to have their children brought under medical care. He hoped the Society would take some action, if even only to express an opinion on the matter.

DR. WYATT JOHNSTON was strongly in favour of the Society making an attempt to have medical inspection of some of our schools instituted.

DR. PERRIGO thought that even if the Society only succeeded in calling attention to the need of medical inspection of schools it was a step in advance. The parents needed to be educated. Often children were sent to school when not well and when presumably sickening from some infectious disease. Dr. Perrigo also referred to the need for modern school buildings; if the buildings were up to date it would be incumbent on the school commissioners to see that they were kept in proper order.

DR. WESLEY MILLS thought that if the discussion did no other good it would show the profession and the public to what extent Montreal was behind in some matters of education.

DR. GIRDWOOD pointed out that as attendance of children at school was made compulsory by the Provincial Government, the citizen was only within his rights in demanding that the schools should be in perfect hygienic order. With a proper daily medical inspection such a condition as Dr. Church had described could not exist.

THE PRESIDENT felt he was expressing the views of all members present when he said that they were grateful to Professor Ruttan for putting the whole question before them, and to Drs. Church and McKenzie for establishing the fact that these conditions obtain here in our midst in such an extreme degree as to require the remedies suggested by Dr. Ruttan. The question was clearly one in which the medical profession should interest itself, and he would suggest that medical men be asked to volunteer to do the work for a year or two to establish the value of their services to such an extent that the public would demand that their services be continued.

DR. RUTTAN stated that the plan proposed by the President had been followed in Philadelphia, with the result that the public soon came to see the value of the system and insisted on its being carried on permanently.

Stated Meeting, February 21, 1902.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Drs. J. T. Halsey and A. S. Morrison, of Montreal, were elected Resident Members.

Quartan Malaria.

DR. CAMPBELL HOWARD read the report of a case of Quartan Malaria which had been in the Montreal General Hospital under Dr. Molson. (See page 179 of the March number.)

DR. FINLEY pointed out that this was the first case of quartan malaria in the records of the General Hospital, this form of the disease being very rare in Canada. The type of the parasite was quite distinctive from the larger size of the granules and their sluggish movements.

Calculus Pyonephritis.

DRS. ELDER and MCCRAE reported this case, the latter showing the pathological specimens. It will be published later.

DR. FINLEY congratulated Dr. Elder on having made the diagnosis, and asked regarding the prognosis after operation.

THE PRESIDENT, referring to the question of operation, said that when it was possible to determine the efficiency of the kidneys, after a little more experience had been gained, the operation of removing the capsule of the kidney after Reginald Harrison's plan, possibly under local anæsthesia, might be successful, though, of course, not in cases as severe as the one at present under discussion.

DR. ELDER, in reply, stated that Morris, in his latest work, gave it as his opinion that, even in cases of double pyonephrosis, it was the surgeon's duty to drain the abscess cavity, and he furnished a list of a good number of recoveries. He agreed with the President that local anæsthesia would simplify matters.

An Anomalous Case of Leukæmia.

DRS. GRANT STEWART and G. GORDON CAMPBELL reported this case. (See page 272 of the April number.)

Cholecystectomy.

DR. MCCRAE reported a case of Dr. Armstrong's with the following history. The patient was a women of about 70 years, who at the age of 20 had had a severe attack of pain in the right side with vomiting. These attacks recurred at intervals of about two years, the pain being sharp and sudden and sometimes accompanied with jaundice.

The present attack occurred on February 3rd with severe pain in the right side, vomiting, feverishness without chills; and on February 6th she entered the hospital, having then a temperature of 101 2-5° and pulse 120. There was distension in the right hypochondrium and umbilical region, and on palpation the abdomen, elsewhere soft, was here rigid, acutely tender, and contained a hard mass. Her bowels had been constipated for four days.

An incision, three inches in length, was made over the mass, and after separating numerous adhesions, the tumour was found to be the gall-bladder, which was aspirated. The fluid obtained was first serous, then sero-sanguineous, and, finally, thick pus, which showed a pure culture of B. Coli communis. The gall-bladder was then incised and three large gall stones removed. Several gangrenous areas were seen in its walls. The whole gall-bladder was removed and the cystic duct tied off. The patient's recovery was uninterrupted.

The gall bladder (shown) was found to be much enlarged, the walls being from three to six times its normal thickness.

Aortic Aneurism.

The second case was that of a man 58 years of age, who suffered from extreme dsypnœa and pain in the chest, and had a small tumour appearing in the lower part of the stornum. The patient, a man of good intelligence, had been a cook most of his life, was addicted to alcohol, drinking heavily and fairly steadily, and had a very doubtful history of syphilis. The pain in the chest began in October, 1899, and along with it there was a dry cough. In February, 1901, the dyspnœa became troublesome and his voice husky and low pitched. He was unable to lie down, and then first noticed a small projection in front of the sternum. The case became more and more evidently one of aneurism, and the tumour in the sternum enlarged. The only classical sign of aneurism which was absent was tracheal tugging. The patient was transferred from the medical to the surgical side of the hospital, but no operation was attempted. Treatment by subcutaneous gelatine injections was undertaken, three to four ounces being injected every second or third day. The gelatine was rendered aseptic, the supposition being that it would be absorbed into the system and assist coagulation in the sac.

At the autopsy it was seen that coagulation had occurred in the sac, and that the patient had died, not of the aneurism, but of an extremely severe recurrent urethritis, pyelitis and cystitis. The only evidence of pressure effects from the aneurism was œdema of the lower lobe of the right lung. The localization of the aneurism had been rendered doubtful during life by the low pointing of the tumour mass. The heart was pushed down until its base was opposite the 7th right costal cartilage.

The Value of Blood Examination as a Means of Diagnosis.

DR. C. F. MARTIN read a paper with the above title. (See page 161 of the March number.)

DR. LAFLEUR was glad that Dr. Martin had called attention to the value of examining unstained blood, as there was a general impression that it was always needful to stain to get good results.

DR. FOLEY asked if it were possible to diagnose syphilis by the condition of the blood.

DR. G. G. CAMPBELL thought it was not possible to place any reliance upon the presence or absence of eosinophilia in skin diseases as a matter of diagnosis. He thought that many of the discrepancies referred to in Dr. Martin's paper were due to faulty technique in the examination. The small amount of blood used in making a leucocyte count, for instance, made a very large error possible, as the blood instruments at present in use were far from perfect.

DR. ARMSTRONG referred to the importance that this subject of blood examination was assuming in surgery.

Stated Meeting, March 21, 1902.

SIR WILLIAM HINGSTON, M.D., IN THE CHAIR.

Pseudo-Progressive Muscular Dystrophy.

DR. J. B. MCCONNELL gave the following report of his case which was shown to the Society.

A boy, ten years of age, had good health up to the age of five, when his parents first noticed weakness in walking and evidences of ill health. This condition of weakness and loss of power gradually progressed from that time up to the present. Up to within two years ago he was able to rise from his chair and reach to the ground, but since then he had been unable to get up himself. There was no history of any cause for his trouble, although he had had several falls (probably the result of his disease), and on one occasion had drunk a bottle of liniment in mistake for medicine. The family history was negative as regards any nervous troubles.

The physical examination showed a normal condition of all the internal organs, the muscular system alone being affected. There was hypertrophy of the calf muscles, marked lordosis, and atrophy of almost all the muscles of the upper part of the thorax. The deltoid was somewhat enlarged in its lower part but weakened in strength. He was unable to lift the left arm, but could, with a good deal of effort, raise the right one. The abdominal muscles were unaffected. The biceps and triceps were both atrophied, while the muscles of the forearm were not involved. The electrical reaction for degeneration was not present. A peculiar feature of the case was that the reflexes were lost in the right leg and very much weakened in the left.

Lupus Treated by X-Rays.

Dr. G. P. Girdwood showed a young woman whom he had treated by X-rays for lupus of the face. She was a native of England, and, after trying a variety of treatments, had come to Canada in the hope of gaining relief from the change of climate. During last summer he had begun the treatment by giving her eight sittings on alternate days, lasting eight minutes each. Then he had left the city, but resumed the treatment again in the autumn, increasing the length of treatments to ten minutes every day. As his treatment had been again interrupted by his absence from the city, he had latterly been using high currency instead of the X-rays, and had continued this for 27 days. The improvement was most marked, the only drawback being the presence of a brown discolouration of the scar; which, however, he believed would ultimately disappear.

The case was brought before the Society to show that this method of treatment was worthy of being given a trial. As to the relative efficiency of X-rays or high currency, Dr. Girdwood did not care to express an opinion.

Dr. Wilson asked if there had been any deep ulceration present in the case, with discharge or odour, and if any rise of temperature had been noticed during the treatment, and also regarding the strength of current used.

Dr. Bazin had seen this patient in September, when the small patch on the right cheek was healed, but those on the nose and left cheek both showed a good deal of erythema and lupus tubercles around the margins.

Dr. Garrow asked regarding the length of time the disease had been present, and whether healing had ever taken place before.

Dr. Deeks had seen a number of cases in London treated by the Finsen light method and the result here was very like what one got from it, although the treatment by Finsen rays was more painful and slower. A feature about Dr. Girdwood's case was the absence of cicatricial tissue, and this contrasted strongly with the results from the light treatment.

Dr. Girdwood, in reply, stated that when first the patient came under his notice the smaller spot of the three was healed, the patch under the right eye was fully the size of the area of brown pigmentation now present, and the larger patch was also active. No rise of pulse rate or temperature had been noted. The strength of current used to put into the coils varied from 5 to 6 amperes and from 100 to 110 volts. He did not know of any way of estimating the strength of a current brought through the air to an object. The distance of the tube had been 12 inches at first and the time of treatment five minutes: later on the distance was lessened to 6 inches and the time increased to ten minutes. There had been no pain at any time and treatment had never required to be stopped for any untoward effect produced. The sound skin was protected by screens made of tea lead. At all times there was a strong odour of ozone present from the effect of the current on the oxygen of the atmosphere, but whether this had anything to do with the result could not be decided. The patient had suffered from the disease for ten years.

Dr. Girdwood also referred to the Finsen light method and explained by a diagram the construction of the instruments used in various forms of treatment by high frequency currents.

Sir William Hingston congratulated Dr. Girdwood on the success of his treatment. Its great advantage was its painlessness. He mentioned the three different varieties of lupus and the treatment required for each. In lupus erythematosus he had had the best results from the continued application of water, and of red wash largely diluted with water. In all cases of lupus attention to the chylopoietic viscera was of the first importance. Sir. William also mentioned the curious fact that most cases get tolerably well in the spring and worse in the autumn.

Fœtus Amorphous Anidous.

Dr. Ridley Mackenzie reported this case, Dr. McCrae showing the specimen.

Dr. Chipman had seen the case reported by Ballantyne and had an opportunity of examining this case. The specimen was very rare, only nineteen cases having been previously described. As Dr. Mackenzie had said, it was a case of twins where one twin had become atrophied and ill nourished. The term generally used was Fœtus allantoido angiopagus, from the existence of the allantois together with "angio" a vascular mass, and "pagus," peritoneum. According to the time that the second twin perished, one found the limbs attached to it or not. As in this case no limbs appeared, this was the form, anideus allanto angiopagus. It would be remembered that in this condition twins arose from one ovum, there had been two germinal areas, or one which had split, the result being that there were two chorions, but in this case there was only one amniotic sac, which made the case rarer still. It would be noticed that the smaller cord was placed eccentrically and had the same twist as the larger one, and that the circulation of the two anastomosed in the centre.

The etiology of the condition was that two embryos, starting life together, for some reason or other one got the start, became stronger, and the embryo with the strong circulation overpowered the embryo with the weak circulation, the result being that the blood was driven by the strong embryo through the umbilical and hypogastric arteries. The heart of the weaker became atrophied, so that its head and upper portions atrophied, while the lower portion was nourished by the blood that was sent backwards through the umbilical arteries, owing to the contraction of the heart of the stronger embryo; in other words, the heart of the stronger nourished both. The first case described dated back as far as 1533, and the records to the present embraced only 19 cases.

Fractured Patella with Unusual History.

Dr. Garrow reported a case of which the clinical history resembled more that of a sprain than of a fractured patella but a skiagraph had showed the mistake.

Electro and Radio Therapy.

Dr. S. F. Wilson read a paper with the above title.

Correspondence.

To the Editor of the Montreal Medical Journal.

Dear Sir,—I am sure that I express the feelings of all my colleagues in Nova Scotia when I thank Dr. Drummond for his sympathetic and appreciative obituary of our dear friend, Dr. W. S. Muir.

There is, however, one sentence which may convey a wrong impression, and I trust Dr. Drummond will pardon me for drawing attention to it. It is stated that I was called in and "at once recognized the presence of appendicitis. . . . ."

I fear this may be read as reflecting on those friends and colleagues, who had the privilege with me of attending Dr. Muir.

It was considered by all of us that the symptoms pointed to appendicitis, but these symptoms had improved so markedly, that on Saturday morning, when I saw him first, we all hoped the attack was subsiding. I feel bound to add that there were some new features of the case which suggested other lesions than appendicitis. All the alarming symptoms returned on Saturday morning, and the operation was performed as soon after as possible.

I am, Yours faithfully,

JOHN STEWART.

Halifax, N.S., Thursday, May 22, 1902.

THE
Montreal Medical Journal.
A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY
JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,

WITH THE COLLABORATION OF
WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. MAY, 1902. NO. 5.

THE ESTABLISHMENT OF A MEDICAL COUNCIL FOR CANADA.

At last, after long years, during which without success one project after another has been suggested and ventilated for removing the disadvantages under which our profession labours here in Canada, the first active step forward has been achieved, and legal sanction has been given to the bill setting forth the constitution and powers of a Medical Council for the Dominion. We do not pretend that the measure as passed is all that we should desire, yet we cannot but recognize that its passage is a notable achievement; as again that the profession in every province from one end of Canada to the other owes a debt of gratitude to Dr. Roddick for his long-continued and strenuous endeavours, directed with a single mind and with absolute disregard to personal convenience, to improve the status of medicine in this country. For this is a beginning of better things: a beginning of such a nature that now it is given to us ourselves, unhampered by legislative interference (so long as our action lies within the limits and intent of the Bill), to develop a higher and more satisfactory state of affairs. And though assuredly the terms of the Bill, as passed, do not make advance too easy a matter—though some people rage and others imagine a vain thing, in fact many vain things—we cannot but believe that the sterling common sense of the medical men of Canada as a body, and the obvious benefits to be derived from the operation of the Bill, will eventually overcome all the opposition, and provide us with a portal through which all who so desire may enter into the unrestricted exercise of their profession in any part of the Dominion.

For this, after all, is the main disability to be relieved. As matters are at present, though we are all Canadians and of a common nationality, it is forbidden to us under pains and penalties to cross the provincial boundaries and minister to other Canadians seeking our help, unless we have fulfilled every exaction of the licensing board of the province we seek to enter,—in other words, unless during our undergraduate days we happened to have followed the exact course demanded by that province. The British Columbian whose interests call him east is absolutely debarred from settling in Ontario and there practicing his profession unless he has in the past completed the course and taken the examinations demanded by the Ontario Board, or unless he is willing to spend years repeating his undergraduate work, in the process of taking the exact courses required. Our French-speaking compatriots settling in Ontario, Manitoba, or New Brunswick, cannot obtain the services of a fellow-countryman as a village doctor because of these same embargos, save in the rare case of a bilingual French physician who has ventured to enter, and has succeeded in passing, examinations in a language not his own, and upon subjects taught in a manner different to that in vogue at Laval. For undoubtedly the French tradition in medicine differs from the English.

That this should be the case is preposterous, and the only way to overcome the difficulty is that proposed in the measure before us. The rights of individual provinces have to be fully protected; each province must retain the right to determine the curriculum and the minimum standard of knowledge to be exacted from all who seek to practice within its borders; but if a central Dominion Council, composed of representatives from all the provinces, establish a curriculum and a standard of examination fuller and more severe than that demanded by any individual province, then the interests of each individual province are safe-guarded. What the province demands regarding qualifications to practice is fulfilled and more than fulfilled, and the Provincial Board may safely license holders of the qualification of the Dominion Council, on condition that the licensee on his part promises to abide by those regulations of that Board which bear upon matters other than the curriculum of study.

Also there can be, and there is, no compulsion brought to bear on the individual provinces to agree to subscribe to the measure. Any such compulsion would be invasion of provincial autonomy ; the measure only determines the method to be followed in securing the interprovincial pact. By its terms there can be no interference with the regulations of the Medical Board of any province concerning the course and the examinations to be taken by those who elect to practice purely within that province. Should political influence ever show itself, and the Dominion qualification ever become lower, or its restrictions more elastic, or should these be thought to have become lower than that of any province, it is in the power of that province to withdraw from the pact. At most the establishment of the Dominion qualification may indirectly lead to the gradual raising of provincial qualifications throughout the country, though equally well it might lead to the reverse, and the development of a higher and a lower order of practitioner, though we admit that this is most unlikely.

Here we would note what appears to us a wholly unnecessary paragraph and one constituting a serious weakness in the Bill. We are unacquainted with the reasons which led to its admission. We refer to the paragraph to the effect that the Council shall only begin its existence when *all* the provinces have legislated to the desired end. We can see no satisfactory reason why the Bill should not have been so drawn as to afford a means by which, say, a majority of the provinces could enter into an agreement to accept the diploma of the Council as adequate for admission to practice within those provinces. It is true that according to the British Medical Acts, Canadian practitioners cannot obtain imperial registration until common action is taken by all the provinces. But however much we may desire to see our Canadian graduates recognized, as they ought to be, outside Canada, this is of secondary import compared with the need for the establishment of what we may term " fair trade " within Canada itself at the earliest possible moment.

We would also have preferred a less cumbersome Council. Its very size may from pecuniary reasons alone, render it difficult to call it together. Considering that, throughout, each provincial medical board would have the means of directly influencing the Council, i.e., that it could under the present constitution break up the Council by withdrawing from the pact, if the Council did not fulfil its demands regarding attendance upon courses in and examinations upon all the subjects required for its own particular license—it strikes us strongly that at most two representatives from each medical board to represent the Provincial interests, and with that, the general practitioners of each province, and a single representative from each medical college, to represent the more purely educational interests, would have afforded a perfectly adequate corporation. For as we say, according to the constitution set down, the council is practically controlled by the provinces. Were it to legislate for medical education and qualifications in general the matter would be quite different, but this it cannot do ; it can only arrange to see that the terms of the interprovincial agreement be carried out.

We know, however, that in this matter Dr. Roddick had to steer his barque according to the currents, and not irrespective of them. The representatives appointed by the Federal authorities must clearly be regarded as a " sop to Cerberus " and as giving the Government a continued interest in the Council. The regulation that the representatives of the medical boards are to be unconnected with any teaching body, is evidently intended to gain the good will of the general practitioners throughout the country. The regulation concerning the number of representatives according to the number of practitioners in a given province, is obviously a concession of the demand from Quebec and Ontario for greater representation than, for example, that given to Prince Edward Island. All the same we regret that political considerations have thus hampered the efficiency of the proposed council.

This subject of due representation has undoubtedly been a grave difficulty. Our French colleagues in Montreal have realized what is here stated, and have given a loyal support to the measure during its passage through Parliament ; they have comprehended that the College of Physicians and Surgeons of this Province of Quebec can always exercise an effective control in the interests of French-speaking graduates and undergraduates. Unfortunately other influences have been at work in Quebec city and neighbourhood, where a violent agitation has been conducted against the Bill, notably by our young colleague, *Le Bulletin Médical*. With an inflation and imaginative powers that are truly Tarasconnais, alas ! but in a spirit that is the reverse of Tartarinesque, the profession is informed that this is an insidious attack upon the French-Canadian people ; that it is an imperialistic measure ; that it is an attempt to force upon the French of this Province the professional education favored by English-speaking people ; that it is a covert attempt on the part of Dr. Roddick to establish McGill as the eventual Dominion school of medicine, to which all who require the higher degree will be bound to come ; and, in short, that the measure is a subtle but shameful attempt to trespass upon, if not eventually to do away with, provincial autonomy, and to coerce and nullify the French medical schools. The very excess of this hysterical attack has defeated itself, and we hope sincerely that the cold water treatment administered at Ottawa by the leaders of the French-speaking people of this country, has had a most salutary effect. The pity of it is in the after effect. The expression of sentiments so uncalled for, so unjustified, as those to which the *Bulletin Médical* has given utterance, is certainly not calculated to make us in this province dwell together in unity and brotherly love.

Tempora mutantur. It was in Quebec, and in the Quebec Medical Society, that the movement in favour of Dominion Medical legislation had its birth and this in 1867, even before confederation was an accomplished fact !

As regards McGill, we would point out to the *Bulletin Médical* and to others, what must be evident to any one who thinks for a moment, namely, that Dr. Roddick in his anxiety to conciliate other interests has converted his Bill into a self-denying ordinance, so far as regards the Faculty of which he is now head. The leaders in our profession in all the larger centres are associated with the teaching staffs of the various medical schools, and the Federal Government therefore, in appointing its representatives and seeking out leading men, is likely to choose a majority of those who hold university and teaching appointments. In this province it is almost inevitable that the Government appointee will be selected from the French majority. The consequence is that whereas Laval, the University of Toronto and the schools in other provinces, may frequently have two representatives on the council, McGill University can never expect to have more than one. "Is this ambition" ?

ON A RETIREMENT FROM THE EDITORIAL STAFF.

It is with keen regret that the Editorial Board of this Journal has complied with the request of its Senior Member that his resignation be accepted. For now twenty years Dr. Roddick's name has appeared upon the cover of this Journal and we his colleagues have consistently received his loyal support and time and again have profited from his wise advice. But over and above his services to the Journal as such, we as a Board experience a sense of personal loss in his absence from our meetings. If it be permitted to strike this personal note we would say that to each and all of the Editorial Staff the monthly meetings of our body have been a most valued institution, bringing us together in a way which no other occasion has shown itself capable of doing, so that the departure of one of our band from among us on these occasions is a rude interruption of old associations. Not but that we have become gradually prepared for this loss. Now that the Act for the establishment of a Medical Council has been passed we may let our readers know that. from the very beginning of the public crusade which has had this successful ending, Dr. Roddick has constantly urged us to accept his resignation, in order that we might feel ourselves perfectly free to criticise the proposed bill, and that our readers might not regard the Journal as his official organ. But as we found ourselves at one with him as regards the need for the measure, and as a body had time and again discussed the need for such legislation and the form that it should take, knowing that our views coincided with his and that, whether his name appeared on our title page or no, our remarks would still be regarded as inspired by him, we refused to see the force of his argument, refused to accept his resignation. We are at liberty to state, however, that as a matter of fact only that in our pages has been inspired by him which has had his signature appended to it.

That he now leaves our Board is from similar motives. With his succession to the Deanship of the Medical Faculty of McGill, his continuance as Senior Editor might seem to imply that this Journal is the official organ of that Faculty. Such it is not. This Journal all these years has been, as it continues to be, a private enterprise unassociated with any corporate body, even though all the Editors happen to be members of the Teaching Staff of one university. Unwillingly we are compelled to recognize the force of this objection on his part, and to see further that, were he to continue a member of our staff, we could not in our leading articles support one or other proposed modification of the medical curriculum without making it appear that he as Dean was already committed to the scheme.

Admitting the force of these arguments we have therefore to submit to the severance of our old associate from us. We do this most regretfully.

AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION.

Owing to the illness of Dr. Wyatt Johnston, the Annual Address of the American Medico-Psychological Association, which holds its 58th Annual Meeting at the Windsor Hotel, June 17th to 20th, will be delivered by Professor T. Wesley Mills, of McGill University, on the evening of the 18th *proximo.*

The following are the titles of some of the many interesting papers to be read at the approaching meeting here of this body ; Folklore of Insanity, Dr. Henry M. Hurd, Baltimore, M.D. ; Boarding Out for the Chronic Insane, Dr. J. H. McBride, Pasadena, Cal. ; The Possible Influence of Rational Conversation on the Insane, Jas M. Buckley, D.D., L.L.D., Morristown, N.J. ; Women Nurses in Hospitals for the Insane, Dr. A. B. Richardson, Washington, D.C. ; the Psychology of Anarchism, Dr. Jas. Russell, Hamilton, Ont. ; Dementia Præcox, Dr. Wm. Rush Dunton, Towson, M.D. ; The Early Diagnosis of General Paresis and the Possible Curability of the Disease in its Initial Stage, Dr. E. D. Bondurant, Mobile, Ala. ; The Psychical Symptoms of Focal Disease of the Brain, Dr. Chas. K. Mills, Philadelphia, Pa. ; An Analysis of Two Homicides, Dr. E. C. Runge, St. Louis, Mo. ; Hydriatics as an Adjunct in the Treatment of Insanity, Dr. E. C. Dent, New York ; The Criteria of Insanity and the Problems of Psychiatry, Dr. E. Stanley Abbot, Boston, Mass. ; How near akin are Insanity, Crime and Degeneracy ? Dr. J. Elvin Courtney, Denver, Col. ; Care of the Insane in Brazil, Dr. W. H. Kidder, Ogdensburg, N.Y. ; The Study of Psychiatry To-day ; What Should it be ? Dr. Louis G. Robinovitch, New York ; On a Few Important Terminal Diseases of the Insane, Dr. Adolf Meyer, Ward's Island, N.Y. ; Litigious Insanity, Dr. Edward B. Lane, Boston, Mass. ; The Organic Sensations in Mental Pathology, Dr. Edward Cowles, Waverley, Mass. ; Some Results and Possibilities in Family Care of the Insane in Massachusetts, Dr. Owen Copp, Boston, Mass. ; Observations on the Insane Negro, Dr. W. F. Drewry, Petersburg, Va. ; Night Nurses in State Hospitals for the Insane, Dr. C. R. Woodson, St. Joseph, Mo. ; The Development of Self-Control, Dr. W. H. Hattie, Halifax, N.S. ; A Case of Adrenal Tumors of the Left Mid-Frontal and Ascending Frontal Convolutions of the Brain, Drs. Walter Channing and Wallace M. Knowlton, Brookline, Mass.

Dr. James Stewart, Professor of Medicine of McGill University was elected President of the Association of American Physicians for the coming year, at the annual meeting held at Washington during the present month. This is the first occasion on which a Canadian has been so honoured.

The Medical Profession of Montreal entertained at dinner in the Place Viger Hotel on May 7th, Dr. Rottot, Dean of the Medical Faculty of Laval University, Dr. D. C. MacCallum, Emeritus Professor of Obstetrics of McGill University, and Sir William Hingston, Professor of Surgery of Laval University, all of whom have completed fifty years of the practice of medicine.

The dinner was a most successful and representative one. Dr. F. W. Campbell, Dean of the Medical Faculty of Bishop's College and University, presided and 150 of the leading members of the profession of both nationalities had assembled to do honour to the veteran members of their profession. The chairman, in his speech proposing the health of the guests, stated that such a gathering as the present had met only twice in fifty years, when similar honours had been paid to the late Dr. George W. Campbell, Dean of McGill University and Dr. d'Orsennens, late Dean of the Victoria College. Dr. Rottot graduated in 1847, Dr. MacCallum in 1850, and Sir William in 1851. Each of the three veterans made an appropriate reply.

Proceedings of the McGill Medical Society of Undergraduates.

CHARLATANISM PAST AND PRESENT.

CLOSING ADDRESS BY PROF. C. F. MARTIN, HON. PRESIDENT.

With this evening's meeting your Medical Society closes one more season, a season such as deserves the heartiest of congratulations to all those who have interested themselves in the society. Your committee has excelled in providing a programme which, to the best of my recollection, has not been equalled in any previous year of the Association, and the large attendance which has greeted the contributors on each and every occasion warrants me, I think, in speaking as I do. That you have been willing to attend these meetings so regularly and in such large numbers indicates, too, an eagerness to learn something more than what mere text-books and lectures teach, and to broaden out into the more collateral interests of the profession. That this is a matter of no small importance will I think be easy for everyone of you to realize inasmuch as by the improvement of one's general culture one is better able to carry on with honor and dignity a profession that has well been called learned. In answer to the question, "How am I to acquire culture, refinement and a proper style in writing and speaking, some one has said: 'not by imitating or mimicking anyone.' It is with writing as with good manners and breeding: Keep good company and do your best and you will write and speak and act like a gentleman. You think and feel and live with gentlemen. Our medical man nowadays, with few exceptions, writes ill. They are slovenly diffuse, obscure and curiously involved, and this for several reasons : first, he must master so much knowledge before he writes and so much time is thus taken up that general literature is neglected."

In considering along what lines I might most suitably address you, I was brought to believe that the relations of the physician to the public in general and to each other, was one which might possibly be of some interest, and perhaps well timed, more particularly for those who are about to sever their connection with their Alma Mater. Judging from the vast number of physicians who fail utterly to realize that intellectual honesty and a devotion to the dictates of a noble profession are features without which no self-respecting member can decently exist, I thought that a few words on the subject of charlatans, empiricism and medical ethics, might properly occupy our attention for a short while, and that I might deal with certain subjects concerning which a previous lecturer in his masterly treatment of the subject of medical ethics, found it impossible in the short time at his disposal to consider. I have taken the liberty of entitling my address, Charlatanism Past and Present, for which reason it will be well that we realize the exact meaning of the term and the relationship it bears to the practice of the regular physician.

As you all know, a charlatan is one who is a boastful pretender to an art he does not understand, in other words a quack. Some have used the term 'empiric' in much the same sense, though it should be remembered that the empiric is one who relies upon experience as the sole guide to his methods and disregards scientific facts. There may thus be two kinds of empirics, the one ignorant, possibly innocent, and certainly honest, the second, equally ignorant, probably not so innocent and certainly dishonest. To the first class belong the physicians of the Dark Ages, some to the time of the Renaissance, and alas! many physicians to-day who are ignorant, but innocent and honest. While an empiric may be wrong in his methods and ideas, so long as his intentions be honest we would not care to class him with the charlatans; where the intentions are dishonest he can belong to no other category but that. Some indeed, while practicing what they must know to be dishonest, have yet a certain amount of faith in the superstitions which they advocate. Such for example was Dr. Teasdill, of Buffalo, who claimed to remove from the alimentary canal of his patients, frogs, lizards and serpents which he regarded as the common cause of disease. His certificates were of the best, his clients numbered among them many men of prominence, though his power to do away with disease depended upon, he thought, the possession of certain amulets, which indeed were found upon his person when he died—on his neck a horse-shoe, a nut and a shilling and on his arms some curious bracelets. All of this, however, merely goes to show that his honesty was greater than some, inasmuch as the mere wearing of his charms indicated that he himself believed in their mysterious and potent influence. Charlatan as he was in his methods and ideas, he is no worse than the more intelligent man, who, without amulets or nostrums or the street stage, impose upon the credulous public and who are almost equally entitled to the brand which I trust none here will ever be called upon to receive.

It is doubtless known to many of you that charlatanism dates back as far as does history and that Hippocrates, 400 B.C., was loud in his exclamation against quackery,—against those who sought to cure epilepsy with amulets and charms, against those in whom superstition was uttermost in the treatment of disease. To his way of thinking the physician should possess a mind of such tranquility and dignity as to be superior to superstition, for it is impossible to be superstitious, he said, and at the same time see the truth. It is a far cry from Hippocrates to modern times, from the ancient Greeks, cultured and uncultured, to the highly intellectual modern, but charlatanism, in those early days a profitable undertaking, has taken more, not less, hold upon the public. The same principles exactly which induced the old Romans to endeavour to ward off the plague by driving nails into the wall of Jupiter's temple, causes even the educated man of to-day to wear a leather ring for his rheumatism, an electric belt for his dyspepsia, 13 chestnuts in his pocket (and the number is important) for his gout and to send his children to the homœopathist. It was the same superstitions which made thousands in the 17th century seek for a cure against scrofula by a touch of the king's hand; but it was intellectual dishonesty and a mistaken idea of loyalty which made Dr. Wiseman, the authority on surgery at that time, to state that there really was efficacy in the king's touch to heal that disease.

As the famous Dr. Jno. Brown has said in his delightful book, Horae Subsecivæ, which every medical man should read and know well, Paracelsus was a renowned and ill-understood medley of evil and good, darkness and light, quackery and skill. His autobiography concluded his work as follows:—In a word, he boasted of more than he could do; did more cures seemingly than really, more cures really than lawfully; of more parts than learning; of more fame than parts; a better physician than a man; a better surgeon than physician.

There are times, however, when quackery really appears in the guise of a benefit, and we owe much to Paracelsus for exposing and doing away with the false pathology of earlier times. Not that his own was any better, for among his many remedies was one to render man immortal, and it was only with his death at 48 years that its inefficacy was made definitely manifest.

It is doubtless a wonder to most medical men who have been trained to a logical way of thinking, that the public, intelligent or otherwise, should acquiesce so readily in the suggestions of the well advertised but otherwise unknown healer. It however, merely proves the sound sense of Pliny's assertion, that any one with a sufficient stock of impudence may reasonably well pass for a physician. With what surprise and amusement, for example, do we read that a certain Michael Schuppach in Switzerland became famous throughout Southern Europe through, as it is stated, "his wonderful and uncommon knowledge of the urine." Without seeing his patients often and by a mere inspection of the urine he presumed to diagnose and treat disease, and with what success may be judged from the fact that his clients came from far and wide, from Italy, France, and the surrounding Swiss Cantons. He received them wearing a nightcap and a waist-coat without sleeves, and it was only after a long series of successes that his downfall arrived. A prominent individual, who had expressed his wonder at the cures, was induced by his own regular physician to send the charlatan, instead of urine, a bottle containing tincture of saffron and chalk for diagnosis and suggestions for the treatment of his malady. The bottle was duly received accompanied by the fee and in reply the nature of the disease was described with the suggestions for its cure. His speedy ruin was, of course, the consequence. Previous to this a reputable physician had endeavoured by publications to protect his fellow citizens and to expose the unreasonableness and dishonesty of the individual, but these were disregarded and his efforts were set down to jealousy rather than to philanthropy.

Nor is it easy to understand how Christopher Ozanne, an illiterate peasant in 1698 became so famous for his skill that three coaches a week travelled from Paris to Chandray, 40 leagues, filled with patients anxious to consult him. Among his patients, too, there were dukes and princes, but to this far-famed consultant the sequence of admission to his consulting room was always adhered to, and neither rank, wealth nor any other distinction was permitted to interfere with it.

Where persons of great prominence, either politically, educationally or otherwise, are willing and even eager to indulge in the fads and impostures of the charlatan, it is scarcely to be wondered at that the populace, ignorant, less distinguished, and still more easily swayed, should follow their lead. We hear, for example, that Queen Anne and George I, gave the charge of their eyes to a man named Read, originally a tailor or a cobbler. He is said to have practiced by the light of nature and was unable even to read. So far did his influence succeed his impudence that a knighthood followed, and even though it was only from Queen Anne, it serves to point a moral and adorn a tale.

What applies to the early part of the 18th century applies with almost equal force to the early days of this our present 20th century and the following, from a man whose school of clairvoyance was such as to give him a handsome income, may exemplify the gullability of our unfortunate untrained public.

"Dr. ——, Clairvoyant and Botanic Physician. Terms of Treatment $5 per month, payable in advance. All medicines found."

"S——— Maine, Jan. 25th, 1886.

Mr. H........,

Dear Sir,—

Yours received. The trouble in this case is caused by chronic disease of the liver and kidneys which causes the blood to be sluggish in circulation, leaving the blood impoverished and impure, debilitating the mucous tissues of the kidneys, stomach and lungs and debilitating the gastric juice of the stomach, also the nervous and muscular system. Consider the case can be helped. Notice head of letter for terms of treatment.

Yours respectfully,

W. W. F."

For graphic presentation and explicitness of diagnosis, this, I think, has rarely been excelled.

The relation of the physician to his colleague, the harmony of which makes so much to enhance the pleasure of one's practice is a feature which I firmly believe is altogether underestimated by a large majority of physicians. I say this, too, advisedly, for after some years' association with men in different parts of the country, recent graduates and very much older men, I have been struck how frequently, more especially in the smaller towns, this relation has been crystallized into one of envy or distrust. One realizes how difficult it is to overcome at times, though the spirit with which a medical man enters on his profession should be such as not to preclude his greatest rival from being socially his most intimate friend and associate. Petty jealousies and hard feelings are very much out of place in a profession which has for its object the physical betterment of mankind and the relief of all bodily ills. It is a good principle and one worthy the learning, that in our criticisms of people in general it is far better to emphasize their good qualities and to overlook where possible those features which are unworthy, and this more particularly among the colleagues of our own profession. It is usually the lot of many recent graduates as soon as they settle in the home they have adopted for their career, to be called in as consultants, and this also at the request of the physician almost as much as the patient, the impression being that with the newer teaching of the more modern medical schools it may be possible for this novice, no matter how young he be, to afford further light in the diagnosis or treatment of the case. Under these conditions the newly arrived is carefully watched by both patient and physician and it remains for him to select one of two courses, (provided that is that there has been no gross blunder in the treatment or diagnosis of the case which will menace the welfare of the patient)—in the first place to suggest an entirely new line of treatment and proclaim that under trial as quite unsatisfactory, thereby gaining for yourself perhaps more rapidly a name among the community and the eternal animosity of the physician. Or else, in the second place, to respect the opinion of your colleague and support him wherever possible in his methods and in his treatment, remembering the while that Nature is kind and that with very different modes of treatment one may arrive at a very successful end and cure. Under these circumstances one is intellectually honest, a gentleman, a friend to his colleague, and has in no sense lost the regard of those patients who have done him the honor to consult him. Even regarding the matter from the point of self-interest one may say that he has cast his bread upon the waters, for some day he may sorely need the kind sympathy of that colleague and his support, for it is only human to err, and when that time comes he may remember with satisfaction and relief the friend whom he on a previous occasion saw through a similar trial.

I would not, of course, imply for a moment that any patient should suffer at the expense of the feelings of any physician, but even where according to your own ideas grave errors are being made in the management of any case, it is possible always for you to so arrange the matter, that those concerned need not realize either the gravity of the mistake, the great need of changes that are suggested, nor even the faulty diagnosis which was made. The temptation at times to show up a colleague may be great, for the temporary enhancement of your reputation, but the satisfaction in protecting *his* reputation should be, I think, always is, of infinitely greater magnitude. Where an alternative exists, which is really of no importance and is yet insisted on in the treatment, and that, too, with great *éclat,* it is nothing short of charlatanism to thus take advantage of a colleague. Medicine is not sufficiently an exact science that there may not be a great selection in the methods of treating many diseases ; the means of handling various diseases change enormously from year to year, and very often the law of one decade is an absurdity in the next.

The more one regards the members of our profession the more one has to learn the extent to which commercialism has become rampant. The more one has to regret, too, how charlatanism in a small way predominates with the regular physician who has had the advantages of a first-class university education. It is not necessary that a charlatan be ignorant as well as dishonest, he may take the form of a consulting physician or of a mere associate in the same locality, and we see him, when in contact with a patient who has been treated by another physician, convey his disapproval, not merely by direct condemnation, not necessarily by ordering that the medicines hitherto prescribed be thrown out of the back window, but by a much more quiet though none the less unkind means of insinuation—a smile of disdain, a shrug of the shoulders, a raising of the eyebrows, each is sufficient to indicate to the patient's friends one's opinion of the previous treatment, or what is still worse, a sympathetic condolence with the patient that he has been so badly treated. A physician from the West whose experience with the modern charlatan enabled him to judge, refers to the class of physicians who should belong to such a category. Incidentally he remarked: Should it be your misfortune ever to live in a town where a charlatan of this type dwells, you will find perchance that after you have called him in to consultation, he has incidentally and of his own accord dropped in to see your patient—just in a friendly way of course, or as a friend—and possibly while there he has taken the liberty to prescribe just for the time being and because the unfortunate patient seemed to be suffering so very much. Incidentally, too, while in the same house he may sympathize with *your* patient, *his* friend, that the attending physician is so inefficient. Or should it be your misfortune to have been unable to prevent a fatal termination of the disease, your charlatan colleague will lament with the friends or neighbours that he was called in when it was too late; that had he been enabled to see the case earlier so much might have been done, and his conspicuous presence at the funeral will add to your disgust and make you wonder how the graduates of recognized medical schools can be so badly trained in the ordinary laws of decency.

One is, I think, well justitfied in placing men like this in the category of charlatan, for in the large majority of cases they are verily imposters, inasmuch as their treatment, let us say of a case of pneumonia, is not likely to vary so much in its results from your own. That they are in some respects worse than the sellers of nostrums and charms is palpable from the fact that their deception is being carried on under the guise of an honorable and noble profession. That medical men should encounter friends in the streets and should declare, unsolicited, that they know of one or other form of treatment superior to that being tried by their own physician, must seem to most of you an outrage, and yet you will be surprised to learn that this is sometimes practiced at no great distance from the Canadian metropolis. So easily is the public imposed upon, so well is the medical profession suited to quackery.

That the ordinary means of advertising in the daily papers are the best means of communicating facts to the public, is something which the quack has long since realized; that this is unethical for a regular physician so to do need not be told to any of you, and yet with what regret do those men interested in their Alma Mater receive from time to time copies of newspapers, chiefly, I am glad to say, in the West, with this or that advertisement concerning our graduate doctors. Little do they realize, I imagine, particularly those of recent graduation, that the clippings were being passed around the classes to the disgust of every member who had known their senior student, to the disgust, too, of every teacher of the faculty. One reads somewhat like this :

"Dr. ...., Graduate of McGill of the class of 189—, McGill University, Professor of Medicine in the University of .... Specialist on Diseases of the Lungs and Heart, Eye, Ear and Nose ; Obstetrician and Gynæcologist; Major Surgery receiving all attention. Consulting Hours 9—12 and 2—4. 126 .... Street."

The same gentleman appeared in Montreal a short time ago, and seemed to be quite ignorant of some of the most important recent changes which had taken place in the medical scientific world. Although the professor of medicine in the university of the town, he did not know the method by which the Widal test was done, although it had then been used for some three years.

These are a few of the topics which I thought might be worth our consideration this evening, for to my mind there are some things of far greater importance than diagnostic acumen and surgical skill,—intellectual honesty, a right relation with our colleagues and their proper respect is of greater importance than even the love of the laity and the accumulation of a large fortune. Let it be said of every member of the profession who leaves the halls of old McGill that "he bore, without abuse, the grand old name of gentleman, defamed by every charlatan and soiled by all ignoble use."

NOTES OF A REGIMENTAL DOCTOR IN A MOUNTED INFANTRY CORPS.

BY

C. B. KEENAN, M.D., Surgeon-Captain, Strathcona Horse.

I feel some hesitation in bringing this paper before the members of a medical society, because it does not deal wholly with medical subjects. It contains the notes, some medical, some not, that I made from time to time while filling the position of a regimental doctor. As any one of you might in the future fill a similar position, a brief outline of the work to be done might be of interest and advantage.

Selecting, or rather overlooking men already selected, was the first duty. As the men were already enlisted, and brought over 1000 miles, this was an easy task. Rejections were few. The first case was that of a men with a glass eye. Rejection was necessary although he had a splendid physique and was a very good marksman. There is a popular opinion that a man who has only one eye, that being healthy, is usually a very good shot. Whether there is any ground for this the honor men in ophthalmology can decide. When rejected and told the cause, he did not see the justice and remarked that one good eye was better than two bad ones. The other case rejected was that of a man with old injury to elbow joint causing limitation of movement and ulnar paralysis. The infirmity would not have interfered with his shooting ability but would have prevented him from doing the heavy work of camp routine.

On looking over the work performed by the individual men, I must confess that if the selection was made again it would be of a slightly different character. The best men are those of medium size, 5 ft. 7 in. to 5 ft. 10 in.; weight, 150 to 170 lbs. Better of a rather nervous type. Avoid big men if possible, and especially if loosely put together. These men, although willing and eager to do the work, lack stamina, and if they contract disease usually have it in a severe form. Gross physical defects, as hernia or hæmorrhoids or marked varicose veins, render a man unfit. A slight degree of varicosity in veins of legs does not, especially in mounted infantry, prevent usefulness. The same holds true for slight degrees of pes planus. Be very careful about enlisting men who have been subject to severe cold or wet, or have undergone severe manual labour for a number of years. These men are very subject to the aches that are usually included under the head of chronic rheumatism and that greatly interfere with a man's usefulness.

Teeth should be good or at least put in good repair at time of enlist-ment. Poor teeth were a frequent cause of digestive disturbances. Avoid alcoholics. A regiment of teetotallers is not possible nor even desirable, but when a man bears visible marks of overindulgence in alcohol, his usefulness as a soldier is gone.

On your second day of duty you will have a sick parade. This is the one parade where you should not require the men to stand at attention. This position, especially in men not accustomed to it is very tiresome, and where the man is in the early stage of a severe disease is an unnecessary hardship. Treat the men as patients, not as privates. At the sick parade, you will divide the men into three classes. Men to be sent to hospital; men to be given medicine and put off duty; and men to have medicine and continue on duty. The regulations provide for anothers class, *viz.*, medicine and light duty, but on active service this class is hardly feasible. About the first class there is seldom any doubt, but whether to put a man on or off duty is often very difficult. Always remember that putting one man off duty causes an additional burden on the next. If undertaking a sea voyage, have a thorough inspection of the men before embarking. Take no sick men, as even on the best equipped ships the hospital facilities are rather poor. If possible have your hospital located near the centre of the ship as the motion is least felt there, and this is a great boon to patients suffering from *mal de mer*. Sea-sickness is usually only a temporary indisposition, but at times it is very severe and of prolonged duration. The most marked case developed in a man of exceptionally powerful physique. I might mention in support of this that he was one of the best inside wings of a champion Rugby football team of last season.

On the second day of the voyage, this man commenced to suffer from severe nausea and vomiting with weakness. Ease was obtained only on lying down. Pulse ran 88 to 100, weak ; temp. 97 to 98°, no organic disease could be made out. In spite of all the usual treatment, such as purgation, stimulants, bromides and compression of abdomen, this condition persisted to the end of the voyage (that is about 30 days) and disappeared after landing. One case of pneumonia, one case of traumatic hernia, and one case of carbolic acid poisoning were all the serious cases that occurred during the voyage. There were no deaths. The men were vaccinated but not inoculated with typhoid serum.

On disembarking, my sick were handed over to the disembarking medical officer, and I was free to land on solid earth with the thankfulness that can only be felt by one predisposed to *mal de mer*. On proceeding to the camping ground we thought they had picked out a specially sandy spot, but later found that all camping grounds were alike.

My first days in Cape Town were spent in becoming acquainted with the British Royal Army Medical Corps. This corps consists of medical officers, hospital attendants, stores and transports. The individual medical officers are under command of the commanding officer of the corps, who details them to this regiment or that hospital as he sees fit. The medical officers wear the uniform of the R.A.M.C. and not of the regiment to which they are attached, thus differing from the Colonial medical officers, nearly all of whom were attached to some particular regiment and wore its distinguishing dress.

The usual duty of a regimental doctor was treating minor ailments, sending men to hospital, giving first aid to wounds and seeing that none were left on the field. At times a regiment would be a long distance away from a field hospital and then the doctor must be prepared to treat fully all cases of wounds and disease. This renders his equipment more extensive than it otherwise would be. For mounted troops an ambulance is necessary, as this force often does its work 3 to 5 miles from the transport, where the hospital ambulances are. The regiment moves over large areas. Men may be wounded at any time. If a man is left where wounded, he may either fall into enemies' hands, or, if night is near, be lost in the darkness. No matter how kind the enemy are known to be, a wounded man dislikes falling into their hands.

I have not yet seen a perfect army ambulance. It should be strong, yet light, as little wood as possible in construction, as this is affected by change in climate. It should have capacity for four recumbent patients, carry six extra blankets, a convenient reservoir of two to four gallons of water, and a means of heating water. Stretchers should be light: some light laths for splints; a very small operating set; large supply of dressings and very few medicines. As all treatment is supposed to be done in hospital, all medical equipment is so arranged; thus a regimental doctor's equipment is really part of an hospital equipment and is, therefore, too cumbersome. There were some smaller cases sent out by private firms, but in every case the vials or cases containing the medicines were much larger than the medicine contained, and so constituted unnecessary bulk. Medicines should be in form of hypodermic tablets or tabloids, in small, thin, water-tight boxes. Chloroform is the only bulky substance. Sterile bandages, and a very small amount of antiseptic absorbent cotton should complete the outfit. The total amount should not be over 25 lbs., at which amount a very complete outfit could be made; five lbs. at least should be chloroform if in a warm climate, and ether if in cold.

Passing on to the next unit in the R.A.M.C., *viz.*, a Field Hospital. There is one field hospital to a brigade. A field hospital as its name implies is mobile and travels with a brigade. It gives first treatment.

but its main aim is to get rid of its patients as fast as possible. It has no beds; the patient lies on stretchers or blankets. It has transport of its own. As soon as possible the patients are sent to stationary hospitals. These are hospitals that are kept far enough behind the fighting line to be out of danger. Here patients have beds and cases are treated to a finish. However, these stationary hospitals are supposed to be gradually advanced from time to time as the line of fighting advances. The total number of beds is 100.

Next is the Base Hospital, 500 beds, where the most serious and chronic cases are dealt with, and attached to which is a convalescent camp. Several base hospitals were stationed in ships. A hospital or ambulance train was the means of communication and did splendid work. Supplies for a regiment are obtained by requisition on base supply stores or hospitals. I always found supplies abundant and easily obtainable.

In this connection I might refer to diseases I met with in South Africa. Enteric or typhoid fever, as you are aware, was the most serious disease affecting the army. It was prevalent among troops stationed near the towns. The water supply was usually blamed. Nearly all the water supply in South Africa comes from surface water. In Africa the sand consists of fine dust, not coarse grains as we see it in Canada. A high wind carries dense clouds of this dust over large areas, and thus pollutes all standing water even in reservoirs. This is one reason for the wide spread of disease. Typhoid or enteric in South Africa is exactly similar to the disease met with in Canada. Cases were severe where the men had undergone great fatigue and in the ambulatory type. There seemed to be a tendency to a rather severe bronchitis. Delirium was usually absent. In patients that had been subject to fatigue, a sleepy condition changing into coma, with gradual weakening of pulse and, later, death was often seen. Hæmorrhages were also numerous and severe. Perforation was also a frequent cause of death. So far as I know, there was no case of suturing of intestines for typhoid perforation. The treatment was mainly tepid sponging; trional was used extensively for restlessness.

The total number of cases of typhoid in my regiment was 49 out of 500 men, 9.9 per cent., and of those 10 died, 20.9 per cent. In this connection I might mention that none of the men of my regiment were inoculated with typhoid serum, as were the majority of the later drafts sent out from England. Statistics bearing on the result of typhoid serum have not yet been published, but the general opinion among the doctors in South Africa was favourable. While it did not render immune it apparently caused the disease to run a milder course. In the base hospitals, the mortality from typhoid, considering the condition of the patient on entrance, was not heavy. On looking over a report of No. 5 General Hospital, kindly placed at my disposal by Dr. Peters, who was civil surgeon attached, I find out of 320 cases of enteric, a total death of 55, 18 per cent. A double or treble ration of tea or coffee, giving men cold tea to drink, while marching, instead of water, would be the best prophylactic.

Here I will mention a disease peculiar to South Africa and closely resembling the lighter forms of typhoid, *viz.* : Velt, Camp, or, as it is termed in Army Reports, Simple Continued Fever. This is a definite disease; onset usually sudden, with pains in back and long bones, severe headache, often nausea, occasionally vomiting, followed later by diarrhœa. Very rarely chilly sensations. Temperature at onset, 100° to 102°, pulse, 80 to 100. The feeling of malaise was extreme; local physicians laid great stress on the existence of a pain at umbilicus during onset, as a characteristic sign. However, this was not constant, and it, as you know, is common in any disease affecting the abdomen. English physicians remarked on the similarity between simple continued fever and that form of la grippe termed gastric influenza in England. I never found enlarged spleen, never an eruption, never any involvement of lung or kidneys. One attack usually rendered the person immune. Almost every man had an attack; 53 cases were severe enough to be sent to hospital. There was only one case where a man had two attacks. It is never fatal. Every physician in South Africa had a specific. A combination of phenacetin and salicin was the favourite. Rest, low diet and purgation was invariably followed by recovery inside of 7 days. The chief danger lay in mistaking a case of typhoid for simple continued fever. It is not contagious.

Dysentery was also prevalent in South Africa. It was not prevalent there previous to the entry of troops. It was found chiefly around Ladysmith and De Aar. Clinically it resembled amœbic dysentery, but amœbæ were not discovered in stools, and I do not know of a case of liver abscess following. There were 53 cases of dysentery in my regiment, as per hospital reports, but the majority were simply severe diarrhœa. There was no death. There were two methods of treatment of dysentery. The modern method as taught by London schools, and the old Indian Army method. The method liked by the Indian Army surgeons was that of a castor oil purge over night, 20 to 30 minims of tincture of opinion in morning, followed in 30 minutes by 30 grains of pulverized ipecac. with mustard blister to epigastric region. All fluid was witheld for 6 to 12 hours. This certainly seemed to abort some cases. If not successful, bismuth and opium was the later treatment. The other method was the giving of drachm doses of a saturated solution of magnesium sulphate every hour for six doses. This also was of value. Of course if this failed, the after-treatment was the same as above.

The other special disease was the veldt sores. These are ulcers found on exposed parts, mainly on backs of hands, but sometimes on legs, never on face. It commenced usually as a small red papule, changing in a few hours to a vesicle about one quarter inch in diameter, filled with a watery or blood-stained serum. This broke and an ulcer was present which also extended till one-half to one inch in diameter. The ulcer was deep with overhanging edges and involved the true skin. I never saw it involve deeper structures. It had a slightly reddened margin, was slightly painful, and healed leaving a definite scar, slightly pigmented. A streptococcus was stated to be always present, when the fluid of bleb was examined, but since cellulitis or even adenitis was rare, its virulence was slight. The ulcers healed readily under cleanliness with aseptic dressing and rest of part.

I might also mention that an occurrence of an epidemic of jaundice closely simulating Weil's disease was noted as several spots in South Africa, one of the chief being at Kroonstadt. Malaria was absent in the parts of the country we traversed, although in a warm climate with standing water. The absence of mosquitoes may have some bearing on this.

I had a total of 24 cases of wounds in my regiment; three cases of bullets passing through lungs, all on left side, in second interspace. No sign of involvement of lung tissue. No hæmoptysis. No shock. Uninterrupted recovery. My first case was unfortunately given an excessive amount of alcohol so that he was almost uncontrollable about one hour after being wounded. In spite of this the man was walking on the second day after being shot, and was discharged from hospital in nine days. However, I would not advocate alcohol as a routine treatment for penetrating wounds of the lungs. I had no penetrating wound of the abdomen. Two cases of neck wound, one from side to side just posterior to angle of jaw, and one in front of left sterno-mastoid about centre and emerging just to left of median line. In neither case did any symptoms occur. Whether bullets went through blood-vessels or around them I do not know, but I never saw a case of severe hæmorrhage following a Mauser bullet wound. It was found in case of penetrating Mauser bullet wounds of abdomen, that it was better not to operate immediately. Rest, abstinence from food for 24 hours and no operative procedure, unless plain evidence of peritonitis or severe hæmorrhage occurred, gave the best results; of course no opium.

Venereal disease caused an absolutely appalling number of invalids.

Even if apparently cured for one month, the exposure caused a return. There was an order that no man with venereal disease was to be sent up to the front, but it was usually disregarded.

I have now exhausted the strictly medical portion, and will turn to the active work. There were several Army Hospitals in Cape Town, all of which were well equipped and doing good work. Parts of the town are very pretty, but, as seen here, there is in that city two races that can hardly be said to live in harmony, and so the evil effects were manifest.

There are no medical colleges in South Africa, but the best work in medicine is done at Grahamstown, the centre of a thriving English settlement.

After six weeks stay in Cape Town, we went on a supposed secret expedition along the East Coast : secrecy was the weak point. Its destination was known, so the expedition came to naught. We then went back to Durban, and here found two large hospital ships. They were well suited for purpose and had good accommodation. Then a trip through Zululand, a pretty country but very rough. Around the capital, Eshoewa, is one of the nicest spots in South Africa ; rolling country, well watered, with clear running streams, fringed with a thick belt of trees and a very fertile soil, makes it a place much to be desired. A short stay there, then a ride of 120 miles back to Durban, past sugar plantations, and orchards where oranges, bananas, pineapples, etc., grew in abundance. Hindoo shrines and Hindoo laborers caused one to think of India. These Hindoos have been imported for the sake of cheap labor with the result of becoming a serious drawback to the welfare of the country. Then by train, past Ladysmith and Dundee to Newcastle, where we disentrained, and for want of better accommodation slept in a church with no blankets. We then marched through Laing's Neck and reached Buller at Ingogo, and were assigned to No. 3 mounted brigade under Lord Dundonald, and the serious work began.

The next day we started on an advance towards Standerton. No Boers were seen, and at night the men were fully convinced that they never would see any, and that the war was practically over. The next day we heard the blowing up of the railway bridge at Standerton by the Boers. We entered Standerton, and found it a small town built mainly of stone or plaster houses. It had as all South African towns have, a general air of untidiness. There were several stores, but little in them. Every person in this town was intensely loyal to England. However, this was the rule and it always disappeared with the departure of the British troops. We made a short stay in Standerton and then went westward to clear the railway towards Pretoria. On July

1st, when the men came under fire, one man was killed, a bullet struck his cartridge belt over the liver, causing flattening of bullet and a large entrance wound with immediate death.

We now found that a large Boer column was moving parallel with us. We halted at Greyling Staldt where we had several little engagements and two men severely wounded. Here we began to tire of army beef and biscuits, and tried Boer bread, but found that the cooking was very poor. The bread was what one would term almost dough here. Almost all the Boers suffer from dyspepsia, for which they take large quantities of glycerine, and the cooking is undoubtedly the cause. The vindictiveness and unforgiving qualities, the dourness, as the Scotch would say, displayed by the Boers, is undoubtedly caused by the dyspepsia brought on by the badly cooked food. If any of you purpose going to South Africa to practice I should advise you to pick your house-keeper in Canada. In this connection I might mention that to a Boer the beauty of his lady is measured by her adipose tissue, so anti-fat methods find no favor there. We then had our first experience of pompom shelling, and it disorganized the ambulance service as the negro drivers wheeled the ambulance and started for rear. However, I must state that on several future occasions these men displayed great coolness and bravery. They were Zulus. Thence up to Vlakfontein and Heidelberg with the usual daily skirmishing. I had several opportunities to visit Boer farms and treat the sick Boer women, as their own doctors had all left. I found them invariably kind and courteous, and although a considerable distance outside British lines, was never molested.

This work of railroad guarding not being very interesting, we were glad when word came to return, refit, and start north to attack the Boers at their last stronghold at Belfast. Word was sent to medical officers to lay in supplies for three weeks; all immediately laid in supply for two months. I got the ambulance in good repair and traded mules till I secured a good team. I got a Scotch cart also loaded with supplies, and got rid of all weak and sickly men. A man liable to take sick should never be taken on a hard campaign. On the first day's march we had a severe engagement at Paardekop. That night the transport was stuck, so we all went supperless to bed with no blankets. As hunger and cold kept most of the men of the different regiments awake, they investigated the contents of a store. As it was dark the majority invested in small jars that they supposed would contain food, but were disappointed when morning showed them to be the possessors of a variegated assortment of paints.

Ermelo was next taken during a blinding sand storm. It is a neat and well built town, as South African towns go, and contained a few fairly well supplied stores. The hospitals contained several sick Boer soldiers. When these were informed that President Kruger had left for Europe, they would not believe it, and stated that they knew him to be a brave old man who would die in, and for, his beloved Transvaal. Next past Carolina, which three of our men held on their own account during the night in spite of a large Boer commando outside. We then touched the south edge of the Boer position at Van Wycks Vley, and while working along the Boer lines to get in position to attack their centre there was severe fighting. At this spot I had the honor of having my ambulance shelled. However, at the distance the shells came from, the Boers could not distinguish an ambulance from an ammunition waggon.

The key to the Boer position was a small rocky hill beside the railroad. It was towards this the main force of the attack was directed. From early morning till late in the afternoon a continuous shell fire was directed at this spot. Throughout this time one could see large bodies of men in extended order marching steadily forward to be in a position for the final charge. When they got to within a short distance of the Boer line, one saw a large body of horsemen disappear over the hill, followed by a rush of British infantry, and the day was won. Some of the Boer guns were worked till the British infantry were within a few hundred yards. Some of the Boers, chiefly those of the Staats Artillery and Johannesberg Police, remained in the trenches to the last and were killed by the charging British infantry.

This was the first place where I saw the effects of lyddite. In open space it has an effect extending only a short distance around. It causes a severe concussion, and if close, it may render a person unconscious, and at the same time cause a general swelling of exposed parts with hæmorrhages from nose or ears. Such cases nearly always recover completely. If further away, it only causes severe headache and nausea or vomiting. Dilute acids are almost a specific for the evil effects. In confined spaces or on rocks it is a very destructive agent, but on soft ground is not effective.

The next day we entered Machadodorp and secured some of the stores of the Boer army. This rendered active service rather pleasanter. Our next march was to release the last of the English persons at Noitchedodorp, but, the guards having fled, they released themselves a few hours before our arrival.

Next towards Lydenburg. Our way lay through a very fine valley called Radfontein. This was an uncomfortable position, valley was narrow, with steep high hills on either side, mostly held by Boers. Owing to a misunderstanding, four of our men were sent to take positions as outpost on a small hill already occupied by the enemy. When near, they were ordered to surrender, but refused, and died fighting, but took three of the Boers to bear them company. Two men who went to search for these met a similar fate. While in this valley the column was subjected to rather severe shell fire by the Boers. During one day there were 250 shells, weighing on an average about 50 pounds fired at the British force, which was well within range. The total casualties were two men slightly wounded. When you calculate that over six tons of metal were required to wound two men out of a force well within range and having no artificial protection, merely that of slight unevenness of ground, you will obtain an idea of the uneffectiveness of modern artillery fire. The outlet to this valley, a position of great natural strength, was vacated by the Boers on the eve of the attack and an undisputed way left to Lydenburg. Following the rule laid down in Wolseley's Soldiers' Pocket Book, we marched through Lydenburg and camped on the side next the Boers. This was in full view and within range of the enemies' artillery. After a field hospital had its tents nicely pitched, the artillery opened fire. After a few attempts to carry patients to a place of safety the Indian attendants left. The position of patients lying on stretchers with shells passing overhead was not pleasant, but no one was hurt. In the morning our camp was shelled again but, as usual, no wounds. Later in the day a company passing over the same ground did not extend and the one well-aimed Boer shrapnel shell, I have seen, burst almost over them, killing five and wounding 13 more.

Our advance now lay over very rough country. A mountain called the Moutchberg succeeded by hills termed the "Devil's Knuckles." It was a road that could be traversed only one way. The Boers never attempted to stop the advance, merely delayed it. We were now in the region where the reserve stores of the Boer army were, so our fare became more plentiful and varied. The men occupied their spare time in washing for gold in the streams. Some of them secured quite an amount. They commenced working a gold mine when stopped by the commanding officer. Next past Spitzkop, about the highest spot in the Transvaal. Through Pilgrim's Rest, a thriving mining town and the present seat of the Boer government. Up to Kruger's post where we were shelled during the night as an adieu by the Boers..

We then turned southward again rather disappointed, and reaching Machadodorp, were ordered to turn in our horses, being now fully convinced that the war was over, so I turned in my ambulance and stores. Then by rail to Pretoria, a sleepy spot surrounded by hills, on which are situated very strong forts. I stayed here for two days. The water supply is poor, so enteric and dysentery commenced to develop again. We had been almost completely free from this since leaving Cape Town.

To our astonishment we found the war not over and were refitted and sent to the Western Transvaal. We were given English horses, and these were responsible for a number of fractures and sprains as, unused to prairie, they never looked where they were putting their feet, and if a hole was there they invariably put their foot in it with disaster to their rider. I was equally unfortunate in my ambulance mules, two of which died half an hour after starting and the remainder came into camp two hours later. There was a severe fight at Frederickstadt, where the Boers had a British general surrounded and cut off from his water supply. I saw several examples of bayonet wounds of abdomen. These were always fatal. The Boers were around the British hospital and one of the doctor's had his horse there. When the Boers were running away one of them took the doctor's horse with profuse apologies for so doing and promises of early return. However, that horse has not come back yet. During this battle, three Boers who were overtaken by the charging infantry threw down their arms and surrendered. After the line had passed they picked up their arms and shot a sergeant and man. They were tried by court martial and shot. It is necessary that a soldier's word should be trusted when he states he surrenders, otherwise there would be a large unnecessary slaughter.

After a couple of weeks' experience of night marches, we entered Polchesfstrom. I saw a case here where a man was shot about four feet distant from the mouth of a gun, the bullet entering the upper lip and leaving through the occipital bone, completely shattering the base of the skull. This shattering is a usual result of steel mantled bullets at short ranges. The children of the town were very eager for our army biscuits and obtained quite an amount, as we supposed they were hungry. But later we found they were collecting the biscuits to send to men on commando. Just before we entered Polchesfstrom, several of the townsmen returned home telling their wives and daughters that it was for their protection. However, they were told that their wives and daughters were well able to take care of themselves and back on commando they had to go. Our time in Polchesfstrom was pleasant: football, baseball, tennis and dancing, relieved the monotony of active service. Then a march into Klerksdorp, another turn at railroad guarding and then we went to the South of the Orange River Colony to join in the popular pastime of chasing De Wet. During the railway journey they halted us one night alongside an unguarded supply train containing unlimited supplies of rum, jam and biscuits. No army rations were required for quite a period afterwards.

We disentrained at midnight and started out for a supposed 36 hours march, taking neither blankets nor supplies. We were out six weeks. We had no field hospital, only two ambulances to a column of 1500 men. Facilities for transportation and treatment of sick were therefore limited. This was the most unpleasant period, but luckily we escaped any deaths. We saw De Wet's army, and could have taken his transport, but orders were to chase him towards a strongly guarded line; we chased him there and he galloped through.

There were so many columns operating in this vicinity that it was difficult to tell British from Boers. The Irish Yeomanry had twice been fired on by mistake for Boers, and gave warning that the next time they would return the fire. The next day they were again fired into by a body of regular cavalry. They retaliated and were not molested afterwards.

On going to attend the wounded of another column that had suffered severely, I saw several examples of wounds made by the soft-nosed, steel-mantled bullets. They cause a small entrance wound. Then the bullet mushrooms and shatters everything in front of it. A wound, other than in arms or legs by one of these bullets is nearly always fatal. They were sporting ammunition used by Boers when the Mauser ammunition ran short.

After a few more skirmishes, back to railroad, entrained for Cape Town, and embarked for home voyage. We had six cases of enteric on home voyage, and two cases of pneumonia; no deaths.

Now turning to a subject that many of you will be interested in, the future of South Africa as a site for medical practice. There will certainly be a large increase in the English speaking population of the Transvaal in the near future. The Transvaal and eastern portion of Orange River Colony possess a fertile soil. The climate in spite of sand storms is very fine. It is dry and clear, much resembling that of Texas. In spite of dust storms it is a suitable climate for cases of chronic pharyngitis or consumptives. In the Transvaal there are vast quantities of gold fields, many of which have never been worked. There is coal in plenty. Johannesburg will undoubtedly be the principal town, but Barbeton, Lydenburg, Klerksdorp and Pilgrim's Rest will be thriving mining centres. Under Dutch rule, the degree of a recognized medical school permitted one to practice, and the same holds good at present. In a short time a British License will be necessary.

THE
MONTREAL MEDICAL JOURNAL.

Vol. XXXI. JUNE, 1902. No. 6.

Original Communications.

REFLEXES—THE INGOING IMPULSES AND THEIR PSYCHIC CORRELATIVES.

THE ANNUAL ADDRESS TO THE AMERICAN MEDICO-PSYCHOLOGICAL ASSOCIATION, MONTREAL, JUNE 18th, 1902.

BY

Wesley Mills, M.A., M.D.,
Professor of Physiology in McGill University, Montreal.

Mr. President and Gentlemen:—

I must begin with an explanation, if not an apology. Owing to the unfortunate illness of my colleague, Professor Wyatt Johnston, who had been regularly appointed to give this address, it became necessary to find a substitute. So, Dr. Burgess, who has done so much work of a kind of undoubted value, undertook that of a more questionable kind when he attempted to refill so important a position at the eleventh hour. He came to me, possibly because of the interest he knows me to take in psychiatry and kindred subjects. That was about one month ago, and as I was then under promise to prepare two papers to be read at the meeting of the Royal Society of Canada, which met on the 27th of last month, and as I had of necessity to examine at least one hundred students orally and by lengthy written papers on my return, I now wonder at my rashness in consenting to appear before you. But, as some evidence against downright lack of sanity, allow me to explain that Dr. Burgess came on a holiday, when, therefore, I was not under the influence of my usual mental tonus—when my loins were not girded up. Moreover, I had just been reading something from the Doctor's pen that was suffused with poetry, so being without the necessary protection of hard sense, he spoke as with enchanted words and the shafts of his argument did penetrate between the joints of my armour thus loosely put on; and in an evil hour I did consent, with the result that ten days ago I found myself worn out with the monotonous and exhaustive work of examinations and with not so much as a rough note ready for this occasion—and all in spite of my most strenuous endeavors. So, gentlemen, I pray you, kindly accept of the best I can give you under the circumstances, and be assured that I prize most highly the honor of addressing you as the representatives of a large body of men who are doing a noble work and one accomplished in many cases under difficulties which you yourselves best understand.

My subject is entitled :—" Reflexes, the In-going or Afferent Impulses and their Psychic Correlatives."

Protoplasm, whether in the plant or animal, is distinguished by its power to react by movement to a stimulus. Nor is this haphazard, for even in the unicellular Amœba and still more in the simple multicellular Hydra, is there already to be observed the beginnings of motor localization. In the Bell Animalcule with its more or less definite or rhythmical movements, we are reminded of the periodic discharges of the respiratory centre of vertebrates. In the earthworm there is a nervous mechanism which results in all the segments of the creature working together in harmonious movements. Yet when the head-end is removed the difference is not what might have been expected by the student who knows only vertebrate anatomy or physiology, much less by the uninitiated. When the worm is cut into segments these still move, and when the divisions are not too small, to some purpose too, and in such a case there can be no question of a brain or will. The nervous system of each segment does not differ greatly from an imaginary simplified segment of the spinal cord of the vertebrate. Perhaps we may with greater accuracy, in some respects, compare it with the sympathetic system of the vertebrate. In any case it must be plain that movements so far as they are dependent on the nervous system, are the outcome of the effect of the external world acting directly as a stimulus; we find in some of the worms the body of the sensory neurone, not as in the vertebrate usually in the spinal or other ganglia in proximity to the main centres, but actually in the skin itself, so that it is clear that there is an admirably simple structural provision made for telegraphing the messages inwards.

There is no anatomical difficulty in the conception that the movements of the worm are largely reflex, whether in the intact or sectioned animal. It will be well to bear in mind throughout what constitutes the simplest anatomical mechanism for a reflex action according to modern conceptions. Using the term neurone to mean the nerve unit or nerve cell, we require for reflex action at least one afferent and one efferent neurone. According to some, the connection between the two neurones centrally is not made directly by the processes of the cell body but by an "intermediate" or "shunt" cell. The diagrams shewn will make this clear. Besides, in nature we must al-

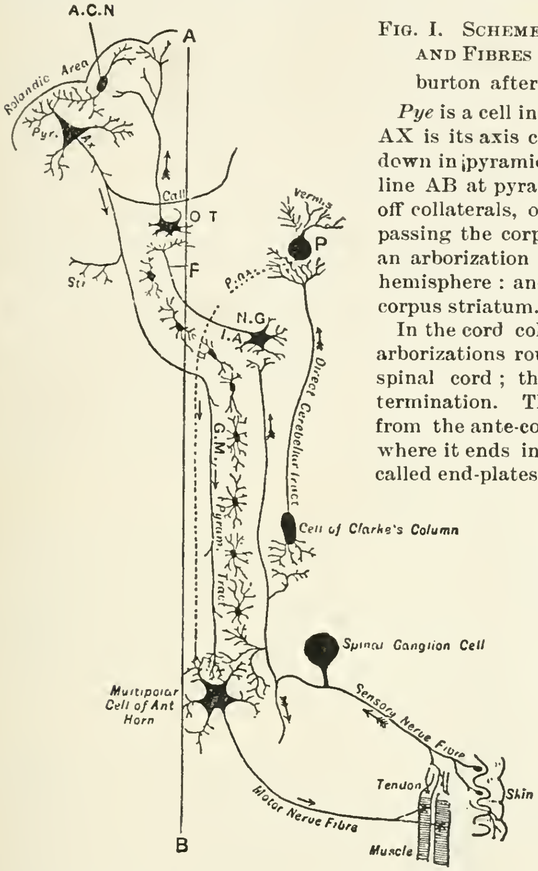


Fig. I. Scheme of Relationship of Cells and Fibres of Brain and Cord. (Halliburton after Mott.)

Pye is a cell in the Rolandic area of cortex. AX is its axis cylinder process, which passes down in pyramidal tract and crosses middle line AB at pyramidal decussation. It gives off collaterals, one of which (*call*) is shown passing the corpus callosum to terminate in an arborization in the cortex of the opposite hemisphere : and another (*slr*) passes into the corpus striatum.

In the cord collaterals pass off and end in arborizations round cells of the ante-horn of spinal cord ; the main fibre has a similar termination. The motor nerve fibre passes from the ante-cornual cell to muscular fibres where it ends in the terminal arborizations called end-plates.

Coming now to sensory fibres, a cell of one of the spinal ganglia is shown. Its axis cylinder process bifurcates, and one branch passes to the periphery ending in arborizations in skin and tendon.

The other (central) branch bifurcates on entering the cord and its divisions pass upward and downward, the latter for a short distance only.

The main ascending branch arborizes around a cell of the nucleus gracilis (N.G.) or nucleus cuneatus. The axis-cylinder process of this cell passes over to the other side as an internal arcuate fibre (I.A.) and becomes longitudinal as one of the fibres of the mesial fillet (F.) which terminates round a cell of the optic thalamus (O.T.) from which a new axis cylinder process passes to form an aborization around the dendrons of one of the cerebral cells (A.C.N.).

The axis cylinder process of A. C. N. arborizes round the dendrons of *Pye* from which we started.

Cerebellum.—A collateral of the sensory nerve fibre arborizes around a cell of Clarke's column from which a fibre of the direct cerebellar tract passes to end in an arborization around a cell in the vermis of the cerebellum.

P. is a cell of Purkinji, the axis cylinder process (*P. ax*) of which passes to the cerebro-spinal axis. A dotted line indicates its course towards an ante-horn cell as it has not been clearly demonstrated.

G. M. is the gray matter continuous from spinal cord to optic thalamus through which pain impulses travel upward.

Arrows indicate course of nervous impulses.

ways include in the outgoing neurone, its peculiar termination usually in a muscle or a gland and known as a nerve-ending, and with the ingoing or afferent neurone, its termination within some peculiar modification of the peripheral epithelium, the whole constituting the so-called end-organ. As the particular result brought about by the efferent or out-going neurone, is due to the stimulus applied to the afferent or in-going neurone through its end-organ, it will be seen that the entire process begins and also ends at the periphery, as distinct from the centre or site of the neurone bodies. We might, therefore, speak of the reflex as a circular reaction.

Considering that it is impossible to conceive of protoplasm except as in some environment, and as it is equally impossible to conceive of this sensitive stuff but as being in some way affected by that environment, we would naturally suppose that in a well ordered state of affairs there would be a differentiation of function advancing towards higher specialization, and that there would be a corresponding anatomical provision to meet this progress. Such we find to be the case and this reflex mechanism is nature's provision for a sure and sufficiently speedy response to the action of the environment; an organism that cannot so answer, must suffer, possibly perish.

The fact that we are here to-day after having been exposed from say twenty-five to seventy years to perils without number, is not due chiefly to our forethought, or the forethought of parents, friends, or even philanthropic railroad, steamboat or street-car companies, but to arrangements— from one point of view very simple, from other points of view very complex; and that, among other things, I shall now endeavor to show in some detail.

All these functions which are concerned with nutrition, in the widest sense of the term are reflex. It is true that you may take a horse to water but cannot make him drink, but when once he has started the process of drinking it is from beginning to end reflex—independent of volition. A pigeon wholly without its cerebrum, which all will agree is essential to volition, will drink when its beak is dipped into water, and as is well known, a man quite unconscious will swallow what is placed on the back of his tongue. The outflow of all the digestive secretions is due to reflex action; the movements of the various digestive organs are not voluntary but in the main at least reflex, the only question being to what extent they are dependent on qualities of the muscle concerned apart from the nervous system.

Even a function of such vital importance as the maintenance of a regular temperature is not, in a warm blooded vertebrate, dependent on the direct influence of the circumambient air, as is largely the case with cold-blooded animals, but is due to regulation by the nervous system of a reflex kind. When we speak of a "bracing" winter day, we mean physiologically one that causes our heat-regulating mechanism to respond successfully to meet the conditions of the case. This is not the whole story of course; in fact the reflexes involved in such a vast variety of effects as follows from a "bracing" day are very numerous as it would be easy to show did time permit. The most that a cold-blooded animal can do in weather that is too hot or too cold is to betake itself to a more favorable environment. The frog seeks the shelter of moist leaves, grass, etc., or sinks into the depth of the pond in warm weather, and when it becomes unduly cold it must either hibernate or perish. Hibernation is, in fact, a provision for preventing the extinction of the species. But warm-blooded vertebrates can in large measure defy changes of temperature. Professor C. J. Martin, of Melbourne, has recently told us that an Echidna in his possession hibernated for four months during the winter with a bodily temperature only ½° C. above the shed in which it was kept. He demonstrated that Echidna is lowest in the scale of warm-blooded animals. These attempts at homœothermism fail to the extent of 10° C. when the environment varies from 5° to 35° C. Ornithorhynchus is a distinct advance on Echidna. In other words, we have in these animals intermediate stages in the development of homœothermism or the power to maintain an equable temperature, *i.e.*, we have an illustration that there has been a process of evolution in this all important function of heat regulation.

All the various forms of locomotion are essentially reflex. The decerebrate pigeon flies quite well, and the frog without its forebrain leaps and swims, while the dog from which Goltz removed the whole cerebrum, had good powers of movement, all of which seems to show that volition, in the ordinary sense of the word, is not essential for locomotion. The pigeon and frog operated on as indicated above, do not, however, fly or leap spontaneously; they require a stimulus—the pigeon to be thrown into the air, the frog to be pinched.

We may ourselves walk a whole block utterly absorbed in thought and absolutely unconscious of the fact that we are walking at all, proving that our will is not in operation, though it or some equivalent stimulus is essential at the outset to initiate the act. Volition is the motorman that starts and stops the machinery. That condition of muscular tissue, whether striped or unstriped, everywhere present in a healthy condition, known as *tonus*, and giving a sense of resistance to touch so pronounced in the healthy young athlete and so wanting in convalescents, the aged, in some of the insane, and in those affected with many other forms of disease or of defective vitality, is undoubtedly due to reflex action. If in the frog the sciatic nerve be cut or the corresponding posterior roots severed, by which in the one case the out-going in the other the in-coming nerve impulses are cut off, the limb affected tends to become limp and hangs lower than the other, illustrating loss of *tonus*. The same loss of tone can be seen in the human face in consequence of weariness or of depressing emotions. We can truly become "down in the mouth," and many a man after a day of fatigue and worry looks years older because of the consequent diminution in the muscular tone, and this is characteristic of age, for the best, fullest life of muscle is of short duration. The swelling importance of the middle-man that comes with ripening years, is not to be regarded as a sign of physiological well-being, though it may be associated with worldly prosperity. It cannot be explained alone by a plentiful supply of sustenance and a plentiful lack of exercise leading to accumulation of

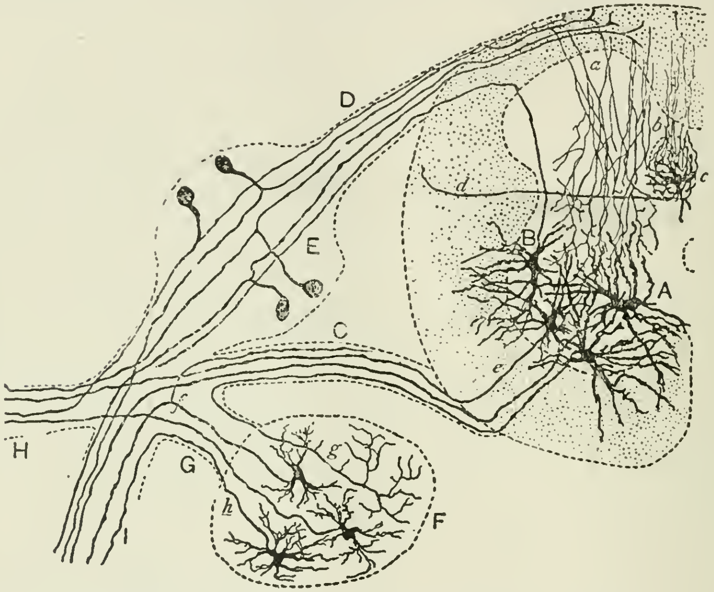


Fig. II. Transverse Section through Half-spinal Cord showing the Ganglia by Golgi's Method. (Halliburton after Ramon y Cajal.)

A, Anterior cornual cells , B, axis-cylinder process of one of these going to posterior root ; C, anterior (motor) root ; D, posterior (sensory) root ; E, spinal ganglion on posterior root ; F, sympathetic ganglion ; G, ramus communicans ; H, posterior branch of spinal nerve ; I, anterior branch of spinal nerve ; *a*, long collaterals from posterior root fibres reaching to anterior horn ; *b*, short collaterals passing to Clarke's column ; *c*, cell in Clarke's column sending an axis cylinder process ; *d*, to the direct cerebellar tract ; *e*, fibres of the anterior root ; *f*, axis-cylinder from sympathetic ganglion cell dividing into two branches, one to the periphery, the other toward the cord ; *g*, fibre of the anterior root termining by an arborization in the sympathetic ganglion ; *h*, sympathetic fibre passing to periphery.

fat, but must be referred largely to loss of tone in the abdominal and visceral musculature and is weighty evidence of functional decadence.

We speak properly of the tone of the various sphincters of the body, and few physiologists will be found to maintain as formerly that this tone was due to a purely automatic or independent activity of centres in the spinal cord. It is practically impossible to reconcile such a conception with the facts. We must now bear in mind that it has been shewn that the very contraction of a muscle gives rise to incoming impulses which must tend to complete the circuit for reflex action.

Moreover, all those mechanisms which protect the sense organs of the body, the various look-out stations, so to speak, act unquestionably reflexly. Winking and the secretion of tears (when not crocodile ones), the movements of the ears, as I have witnessed many times in individuals sitting in front of me at a concert, sneezing, etc., are reflexes. The internal mechanisms of the eye, both for accommodation and the changes in the pupil, are only in the most indirect way voluntary.

When the in-coming impulses from below by way of the vagi are cut off from the respiratory centre in the medulla oblongata, its action is seriously impaired, and when withdrawn from above also by removal of the brain anterior to the bulb, there results only a miserable spasmodic action, a gasping or sobbing rather than anything worthy the name respiration.

So thoroughly reflex is the action of the vaso-motor centre that though we speak of this region of the brain sending out tonic impulses, we no longer think of this function as absolutely independent of the incoming or afferent impulses; on the contrary, one of the classical experiments in physiology consists in showing that the stimulation of the chorda tympani, by which we produce dilation of the vessels of the submaxillary gland, is an imitation of the effect of the introduction of food into the mouth except that we act on the out-going limb of the reflex arc instead of the in-going one.

A good many acts that have become almost wholly reflex were originally as purely voluntary. We have only to watch the efforts of the child in learning to walk to be aware of the fact that the facility which it shows in carrying out this complicated act after a few weeks has only been attained after thousands of efforts affected by the best will-power it could command. Yet the adult is hampered, rather than aided in walking when he attempts to guide each step by volition.

In learning any new thing requiring muscular co-ordination we endeavor to pass as rapidly as possible from the voluntary to the reflex stage. Those of us who cycle can remember with amusement our painfully willed and anxious efforts. with many defeats, and how at length they passed into actions as purely reflex and unconscious almost as breathing. The conversion of voluntary into reflex actions means passing to a higher plane because it leaves the organism free to use its will-power for new attainments, or in that necessary control which the physiologist terms inhibition and by which alone reflexes are made safe, for reflexes without inhibition are like the railroad train without brakes. An organism with perfect reflexes and adequate control is functionally a relatively complete and finished mechanism.

Sometimes, however, a reflex itself is inhibitive. We have a beautiful example of this in the mechanism for the movement of the limbs. The in-going impulses from the biceps when contracting result in a relaxation of the triceps, that is to say, a marked diminution of its *tonus* brought about reflexly. Inhibitory centres have for some time been known to exist in the cerebral cortex. The subject of inhibition, so closely allied to reflex action, is of vast importance, but has been so recently admirably discussed before you by Professor Lombard, that I shall not pursue it at length.

Most of the world are accustomed to maintain that their ears and their eyes have little connection, in fact, that they are functionally as far apart as the poles. But not only does observation show that they are nearer neighbours than they seem, but that they frequently if not constantly work together for the good or ill of the organism, mostly the former. When we turn the head or the eyes in the direction of a sound we imagine that this is done voluntarily, but a reference to two cases that came under my observation during the recent oral examinations in Psysiology at McGill, will show that a connection of the kind in question exists of a purely reflex character.

A small gong fastened to a wooden upright, about 8 feet from where a student was standing facing me, was being used to mark off sharply the time limit of the examination. I was seated on a line with this gong, and, in the one case, the moment it sounded the student's eyes both seemed to fairly jump to the right in the direction of the sound, reminding me of the bolting of a team of horses across the street from fright caused by a loud noise. In the other case, a student in the midst of his answers suddenly turned his eyes, and to some extent his head, to the left towards a canary that was singing loudly at the time. Now, both these students were engaged at the moment in answering questions, and it was impossible that the movement referred to could have been voluntary. It is said that a deserter has been detected on the deck of a ship by shouting to him as he walked away from the observer, "Halt! Right about Face!"—the command being obeyed. Whether the story be true or not, it certainly rests on a good physiological foundation, for we can now explain all this by associated reflex action.

The circus and the theatrical agents who cover our fences, bill-boards, etc., with great masses of brilliant color understand their business, for they cannot take more effective means to entrap us, inasmuch as we turn towards such appealing stimuli in a purely reflex fashion, and even Solomon's direction, "Let thine eyes look right on, and let thine eyelids look straight before thee," may fail to inhibit such a reflex. We as surely look as the moth flies into the flame. It is plain that in general the turning of the eyes or even of the head or whole body towards a source of sound or light would be a great advantage, as say in the case of the whizzing shell about to burst. That the anatomical paths by which the impulses travel should have been so fully worked out is to be attributed to the excellence of the technical methods of the day and to that higher mechanism which is so prominent in man and which is not reflex in the ordinary sense, but which starts and controls the reflex actions which bring about the results that man's higher brain parts initiate; for, without these reflex actions required for carrying out the skilled technique, this would have been impossible, however ardently desired or beautifully planned.

Now, if one surveys the whole of the animal kingdom with the physiological eye, it will be seen that differences so far as movements and their functions generally are concerned, are to be sought chiefly in the extent towards which ordinary processes which are common to all are interfered with by the working of a highly developed brain. A frog and a man tell the same physiological story in substance up to a certain point, then in the case of man, because of his immense cerebrum, begins a new series of volumes; or, to change the figure, there is one physiological melody, but with a vast number of variations, some of them being obviously but variations, others additions, yet the physiologist, like the trained musician, should never lose sight of the melody amid all the variations, and to avoid that with our specialization, even in physiology, it is no easy task.

But, even to-day, Gentlemen, on this one of the high days of your life, the most that you do is to be explained by reflex action as I think I could show in detail did time permit; and if that applies to-day in a strange place under unusual conditions, how much more fully does it hold for an ordinary day in a familiar locality when you are treading in the well-beaten paths of your daily duty. And who will compute the vast gain to us physically and mentally of such being the case—the incalculable saving of energy from lower for higher things, with that economy of will power for the greater things—the higher things—not to mention the emergencies of life!

With our practical tendencies we have been accustomed to lay perhaps undue stress, physiologically, at least, on the out-going limb of the reflex arc. While it must appear that from every point of view the in-going arc or the afferent impulses are of equal importance, and because this is the case, and because this aspect of the subject seems to have received insufficient attention, I will now ask your consideration of it.

Everywhere, as I hope to show by some lantern slides shortly,* nature has in the higher animals paid the greatest attention to the elaboration of complicated structures in which the afferent limb or in-going axone begins. These constitute the various forms of the end-organs. They represent the receiving telephone, if we may not even say the sending operator, at all events they are of essential importance, for without these the functional result is impossible. Remove the epithelium in which the end organs are found, which happens in blistering, and pain is the only impression possible on stimulation of the surface beneath the upraised cells. Cut the posterior roots and not only are all forms of feeling impossible, all reflex action destroyed, but, as has been shewn recently by Warrington and others, even the motor neurone bodies, that we supposed remained unassailable in their independence, have been shewn to undergo a spoiling process, a disorganization of the finer mechanism of the cell body—a form of degeneration of the staining particles known as Nissl's bodies from which it is possible that the cell may or may not recover—and all because the usual inflow of impulses from the outer world has been cut off.

Long ago it was discovered that it was not good for man to be alone. Now we know, on anatomical and physiological grounds, why this is the case. We get along without our fellowman badly—we do without our fellow-creature, woman, still worse—and the bachelor is a man who starves his soul by closing the doors and drawing down the blinds. He shuts out the afferent impulses of the most important kind, those that through the eye or the ear reach the inner man, and a sort of psychic degeneration or "chromatolysis" is apt to result, and does infallibly follow unless he substitutes other afferent impulses with special care; and it is questionable if this can be adequately done by most men,

I hope, Gentlemen, that I have shewn you new and potent reasons for the existence of an institution as old as the Garden of Eden.

Cutting the posterior roots, or their invasion by disease leads to loss of co-ordination in movement. This is very pronounced also when the in-going impulses that reach the centres by the vestibular nerve are cut off by the destruction of the semi-circular canals, when not only locomotion but maintenance of the erect posture is impossible. The tabetic subject is still more inco-ordinated when the impulses reaching the centres through the eyes are cut off. Ewald astonished us some years ago by showing that destruction of the semi-circular canals leads to a loss of muscular *tonus* with corresponding difficulty in the maintenance of equilibrium. As you will see by the slides to be shown presently, the paths by which the nervous connections essential for the comprehension of this result are now known. So that we may say that the tone of muscles, the maintenance of equilibrium, successful progression, as well as much more of vital importance to the organism, is absolutely dependent on these impulses that reach the centres from divers paths, the relative importance of which is probably different in different species of animals and in different individuals. We are all aware by experience of variations in our physiological condition caused on the one hand by the excitement of a large city, and on the other by the calm of the country, but the cause of this has perhaps not been adequately considered. When we think of the multitudes of stimuli that act on the eye alone in a single hour in any large city, as we walk the streets, and remember that these call for a constantly changing action of both the intrinsic and extrinsic muscles of the eye, with the necessity of sundry nervous discharges; that the latter give rise to reflex actions causing expenditure of energy by all the muscles of the body to a greater or less extent; when we add to this a corresponding effect through the ear, owing to ceaseless noises so that we are exposed to a veritable fusilade of sounds; and when we take into acount the effects of very varying and often, in these days excessive light stimuli falling on the eye; when we reckon with the concussions from hard pavements, etc., without any other considerations, such as the necessity for sudden movement and sudden inhibition of movement with the constant use of not one but all the centres implied in such matters as "catching a car" or avoiding one or perhaps several, is it not possible and easy to understand why people these days incidently seek refuge like hunted animals from the above-mentioned enemies of physiological peace and harmony by residence in the suburbs, by ever lengthening or more frequent vacations, by giving up a large part of Sunday to rest if not to sleep, etc. And, if insanity is really on the increase, herein must we seek for a part of the explanation at least, that is in those uncounteracted, irregular, excessive stimuli; or, as I would now express it, in afferent impulses that are too numerous, too frequent, too varied or too powerful. Contrast with this the soothing effect of the few but large stimuli that pour in on us like a gentle rain, from a broad but somewhat varied landscape while there is no war between the senses because of jarring noises, flashing lights, etc. In other words, when the centres are affected by stimuli such as are favorable to that general but not too active functioning of the body, when all things go on well because the functional pace is not too hot nor too changeable.

---

* This address was illustrated by seventy lantern slides, and by animals showing the effects of recent ablation of the cerebrum, the cerebellum, the semicircular canals on one and on both slides, and also by animals that had recovered very fully from some of these operations.

Without afferent impulses we pass into unconsciousness, as is illustrated by the oft-cited case of the boy with one hearing ear and one seeing eye, who, when these were prevented from functioning, fell asleep. And with a certain kind of afferent impulses we may become mad.

The beneficial effect of change of scene and climate is to be explained chiefly through the senses—the afferent impulses. The centres must have impulses, as has been shewn experimentally, or they either atrophy or degenerate, and these must be variable but all within due bounds and according to the laws that I suggest would be well worth the study of all and not least by those who have to do with the insane. Psychiatrists have already recognized practically the necessity for varied forms of work and especially of amusement in the treatment of the insane. To put it scientifically it has been shown by the experience of institutes for the insane and others, that systematic exercises in which rhythym or regularity in in-coming and out-going impulses are prominent, have been followed by beneficial results especially in the case of those of low cerebral development. In other words, the brain may after a fashion be built up functionally.

On the other hand, special attention must be paid to the quantity and quality of the afferent impulses as implied in amusements. Nearly all persons, sane or insane, absolutely require to attend to the quality of the influences that affect them through the eye and the ear. Pawlow has shewn by his magnificent experiments that the quantity and quality of digestive secretions vary, not only with the amount of food, but with the surroundings of the subject—the accessories of the food. And experience has taught each of us that at a banquet with its appeals through the eye and through the ear, by music, not to mention other influences. an unusually large quantity of food can be disposed of without discomfort or injury.

The number and kind of impulses best for each individual is varied. The man or woman of artistic tendencies must have the visual or auditory impulses in a larger degree and of a more carefully selected quality than others or they suffer, just as some people would starve on a food supply that amply suffices for others. We may not as yet be able to write prescriptions for our patients with afferent impulses as the *materia medica*, but possibly study along this line would show that we could make a reasonable approach to it. It would be useless to prescribe afferent impulses through the ear in the form of dance music for the cultivated musician, but this might prove the very best remedy for the wearied, worried or insane ordinary mortal, uncultivated musically; for him a Beethoven sonata would be as caviar to the vulgar. general.

But a subject like this is boundless, and I can only hope to say enough this evening to indicate some of its possibilities. I can speak but briefly of the psychic correlatives. All along you will observe I have been assuming that there are psychic equivalents. Although the in-going impulses favorably affect the centres quite independently the ingoing impulses favorably affect the centres quite independently of consciousness, they are divisible, speaking generally, into two classes —those that produce or are associated with subconscious reactions only, and those whose effects come into the field of consciousness to a greater or less extent. Both are, no doubt, attended by functional changes and the subconscious in our life will bear far more study both physiologically and psychologically than has yet been given it. It will be agreed that reflexes and instincts are closely allied if not correlatives. Even the most original thinker, the most versatile writer is a creature of reflexes, otherwise the statement that each has his own style would be of much less force. Do as we will, we cannot escape the effect of habit, of psychic as well as physical habit, if I may so express myself, for bodily habits are little else than associations of reflexes more or less complex and these have their psychic correlatives.

Once having written or spoken on a subject we tend to fall on the next occasion into the same manner of expressing ourselves. The mass of mankind must be imitators because no new dominant ideas, as in the case of the genius, break through the force of mental habits and inhibit the mechanism, psychic and somatic, which repetition has formed and welded into often complex wholes. It is literally true that the souls of most people are made for them, that is their quality determined by their environment. The afferent impulses act on nervous centres and are associated with all the phases of consciousness in a way we recognize but cannot fully understand or explain. It is true that the resultant product can be explained neither by heredity nor environment—neither by the nature of the centres nor by the nature of the afferent impulses—but only by a consideration of both; and these factors are variables to be determined by the study of individuals. On the one hand we have the physical man kept from being a mere mechanism answering like a jumping-jack to the play of afferent impulses by physiological inhibition with its psychic equivalent which we term volition; and while every thoughtful man must feel that we but imperfectly understand either, yet we may hope that we are getting nearer to an explanation.

Some investigations that I have been making on pigeons with more or less of the cerebrum removed, have been highly instructive to me in this connection.

Man differs from the lower animals by the variety and richness of his psychic associations. The child of a few years has more numerous psychic associations that the most intelligent dog, and he has a cerebral development of a neurone complexity corresponding to this. But limit the afferent impulses, confine both under an identical and simple environment and the dog and the child will come nearer together psychically. Modern civilized life is full, probably too full, of afferent impulses; they should be regulated. How to keep all that are good in themselves, how to maintain sufficient richness in variety and turn these to account for the best development of the sane and the best management of the insane is, I venture to think, to state some of the physiological, psychic or educational aspects of the subject in broad terms—to claim that it is the whole would betray a narrowness which enthusiasm could not excuse.

I have in this address made no allusion to a large class of afferent impulses derived from the viscera, etc., and giving rise to the organic sensations, and which, unquestionably, plays a large part in that feeling of well-being or its opposite with which all are familiar. These impulses, no doubt, greatly influence if they do not originate emotions. The subject is important, but I can the better omit further reference to it as I find that one of the members of the Association, Dr. Cowles, is to treat of "The Organic Sensations in Mental Pathology."

To sum up the whole discussion, we may say that practically all the functions of even the highest animals are in whole or in part reflex: that the purpose of volition is chiefly to imitate or to regulate or inhibit reflex action; that most of such reflexes are carried out with great economy of energy and largely unconsciously; that instincts and habits are in some measure the psychic correlatives of simple and associated reflexes; that man differs from other animals in the degree to which he can control those reflexes and their psychic correlatives, rather than in any fundamental difference of nature so far, at least, as the subject under discussion is concerned.

ADDRESS TO THE GRADUATING CLASS IN MEDICINE, 1902.

BY

C. F. Martin, B.A., M D.,

Assistant Professor of Medicine and Clinical Medicine, McGill University; Assistant Physician to the Royal Victoria Hospital.

Having, after four successive years of steady application, attained to the distinction implied by the title you have just received, the congratulations of the Faculty and your other friends are quite in order.

Although it be true that you are but recent graduates, yet this indicates a very wide, though, perhaps, superficial knowledge of the various branches of Medicine, and it rests with you to recognize that such facts as you have now acquired *are merely* knowledge, which, after all, is, but *one* of the many qualifications of the complete physician. Knowledge alone does not necessarily imply a keen insight into human nature, a due appreciation of one's surroundings or a proper judgment; in other words, the practitioner will soon learn that he must add to the science of Knowledge the art of Wisdom—an art which cannot be taught in a college curriculum nor crammed up in a few months or years, coming rather of itself spontaneously to those who observe patiently and carefully and honestly for years, and who profit by their many experiences.

The boy George, some one has said, may explain to his admiring father the merits and intricacies of his new rifle—any scientific improvement the youngster may teach his governor—but don't let him go further and attempt to instruct him in the art of finding and bagging his game. In Medicine, as in hunting, such an error easily occurs unless the neophyte ascertains in due season that the greatest of wisdom lies with those who appreciate their own ignorance and who have a proper sense of humility and awe in approaching any profession, or when standing on its threshold.

In welcoming you as colleagues in the pursuit of an honorable, dignified and noble profession, one might be tempted to say much of the duties of the physician to the public, to his patients and to the profession—of his opportunities to be helpful, sympathetic and unselfish, of the necessity for care in the diagnosis and treatment of the cases under his charge, and, above all, of the great need, too often overlooked, of more of the milk of human kindness in practising a profession which has for its object the maintenance of human life. But all of you in your daily hospital duties have long since realized wherein your power for good may lie—nor need you do more than emulate the example set by your own late Dean, who, having laid aside the emblems of his office, is now taking a much needed rest, retaining the respect of his colleagues, the admiration of the people and the lasting affection of all his patients.

Coincident with the resignation of Dr. Craik came the appointment of his successor, our present Dean, Dr. Roddick, than whom none is more popular and in sympathy with both colleagues and students, and to whom we are so much indebted for his efforts to promote the interests of Canadian medical education. I cannot resist the temptation to quote just here from the valedictory address he delivered to my own graduating class ten years ago:

"Gentlemen," he said, "the profession of your choice is an arduous one—and full of responsibilities. It likewise demands from its members the greatest devotion and a large share of self-denial. On the other hand, there is no calling which, in itself, tends more to elevate and refine its followers—nor in which one's life can be made so useful. And what greater gift than that of daily usefulness to one's fellow-creatures?"

Were I to select one feature wherein the incipient physician may to-day achieve the greatest public good, I think I would say that in the propagation of *intellectual honesty* lies his best opportunity for doing good to the profession and the world at large. Thanks to charlatans, on the one hand, and to not over-scrupulous practitioners on the other, people are apt, and with some reason, to question the opinions of medical men and trust to those who are neither entitled nor able to give sound and honest advice. While knowledge is constantly more diffused as civilization advances, wisdom does not always keep it company. There is a widespread curiosity on the part of the public to know and discuss matters medical, even though unable to appreciate to any proper extent the nature of the subjects under consideration. Having tasted of the Pierian spring they have neither time nor desire to drink deeply, but are ready non-the-less to recommend, as with authority, this or that method of treatment—this or that drug, doctor or appliance. Some will advocate the mind cure alone, or special varieties of massage, because their friends were thus most marvellously cured, forgetting the while that mental repose and massage—which are the fundamental bases of these lines of treatment—are methods which belong to every medical man's armamentarium, and when practiced by irregular individuals are the only germs of truth in such glaring misrepresentations.

It thus happens that between the conscientious physician and the irregular unlicensed healer this difference exists—that while the former is rational in his method of treatment, modest in his appreciation of what medical skill can do, and honest in his assertions of its present limitations, the mental healer openly avows his ability to cure all human ills, be they cancer, locomotor ataxia, or general paralysis of the insane, provided, of course, that the case be seen in time!

Others, again, believe in no doctors whatever, either because medical science is so often fallacious, or because something higher than reason—the inner consciousness—tells them that medicine is unnecessary, and that there is really no such thing as illness. A serious malady with perchance a fatal result is at times their only and bitter lesson.

Curiously enough, on the other hand, some of the public think a physician should possess a specific remedy calculated to alleviate or remove every physical ailment to which our bodies are liable, and, having failed to gain relief, in their unreasonable disappointment at the profession at large, they will resort to the information afforded by the daily press, seeking out some of the nostrums which they read are most certain of healing all diseases. Their failure to obtain relief is hushed up for very shame; a possible cure, previously unattained on account of the relatively incapable physician and due now, perchance, to time and nature's beneficence, is lauded to the skies as a triumph of the newer method, and charlatanism thus runs riot.

Would you duly offset the evil influences here mentioned, it is first of all essential to be honest yourselves—to acquire a reputation for truth, not only in your statements and opinions of a case, but, likewise, for common honesty in your prescriptions—giving medicine only where needed, operating only where no other means is so satisfactory—and, in fact, in all you say or do, to be known as sincere, conscientious and severely truthful. It rarely chances that a physician would do better to conceal the truth, for, with sufficient tact and due sense of the fitness of his surroundings, he is enabled to make a patient bear with complacency truths which might otherwise be most trying and unpleasant to hear.

To fortify your position in the community still more, it is essential that the public should respect the profession of which you are a member—that they should find in their physician one who has a liberal education, with culture and refinement in his tastes, dignity and a proper self-respect evident in his manner and speech—an appreciation of human nature and a desire to be an exemplary man to those in his community.

Let us, therefore, plead for a better use of leisure hours, for an interest in matters outside of our profession, wider collateral reading, more of art, music and travel—and all those features of education whereby as individuals we may raise the standard of the guild to which we belong.

To some of you the good fortune will come to be residents of hospitals, here or in some other parts of the country, and thereby you will acquire in a short time an invaluable experience—testing your ability to get on with your neighbours and gaining that confidence in your own opinions and methods which is so difficult to acquire under any other conditions. To all, however, let the suggestions be repeated, that the temple of knowledge resting on the dim and distant heights is only to be attained through the long and winding pathway of humility, and happy is he who, conscious of his own infirmities, is willing to look about him ready to learn from others the road he too should pursue. Nowhere as in hospitals are reputations so quickly made or marred for those who are on the threshold of their career.

Failing to gain the coveted hospital appointments (for though many be called, few are chosen), an excellent alternative exists in a visit to the celebrated European clinics. Indeed, no one having such an opportunity should neglect to avail himself of it in the early years of his professional life—and as often thereafter as is expedient. While there can be no doubt that our progressive neighbours in the South may grant equally good facilities for study in many of the branches of Medicine, there are other and collateral interests which make a European trip still more profitable and commendable. By realizing beforehand along what lines the student intends mainly to devote his efforts much time will be saved, and by arranging before his departure for opportunities to continue similar studies on his return, the European teaching will be all the more valuable and appreciated.

Many of you, again, will enjoy the enviable existence of a country practitioner—enviable in truth, implying as it does a unique position in the community, where, as a family physician, you occupy a place which in the larger towns is passing all too quickly away. The freedom from the turmoil of the more strenuous city life—the opportunities for mental repose and a congenial and useful unostentatious existence, are not greater in any other profession, and compensate in no small degree for the long and weary midnight rides, the grave responsibilities when aid is not by, and the comparative intellectual isolation.

Situated under such conditions and spreading goodness wherever you go, there is little need to lament the part you are taking in the advance and progress of medical science. It is given to very few to become truly scientific workers—to devote their time usefully to elaborating the various problems in medicine which will be of value in curing and preventing disease. Of the hosts of men at work, and those who, though not at work, are writing, very few are capable—the result being that much of the current medical literature is worse than useless, rendering it difficult for the recent graduate to sift the vacant chaff from honest grain. Experimental research is by no means a necessity for every physican—but rather a pursuit to be indulged in according to one's leisure and opportunities. If you do not, therefore, feel enabled to devote ample time to the work and have not the eagerness to persist, by all means keep out of it, and you will confer a boon on your colleagues and a benefit to the profession.

In meeting now for the last time together, your teachers wish you all prosperity and would remind you that success does not imply wealth or even a lucrative and influential practice. Rather let it be said that to acquire this at an early stage in your career is more to be lamented—preventing you from keeping abreast of medical advances and causing your talents to arrest in their development, and your education ten years later to have suffered in the extreme.

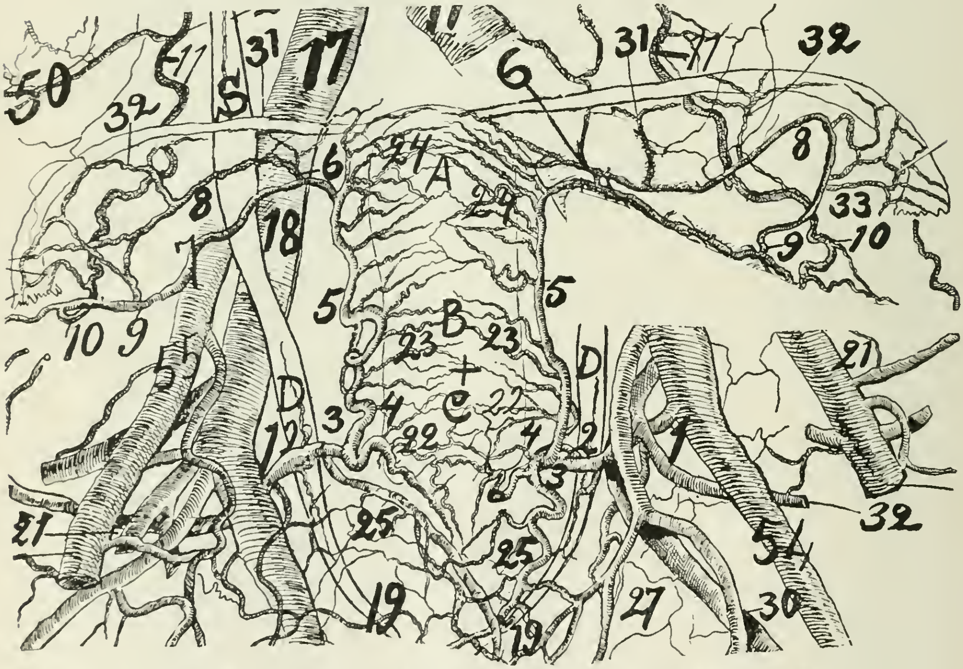
To be successful as a physician you must gain the respect of your colleagues, be devoted to your profession and render unto it the great debt you owe it—not standing still mentally, but using every hour to some purpose, realizing that "the bird of time hath but a little way to fly, and lo! the bird is on the wing."

THE OVARIAN VASCULAR CIRCLE.

BY

Byron Robinson, M.D , Chicago.

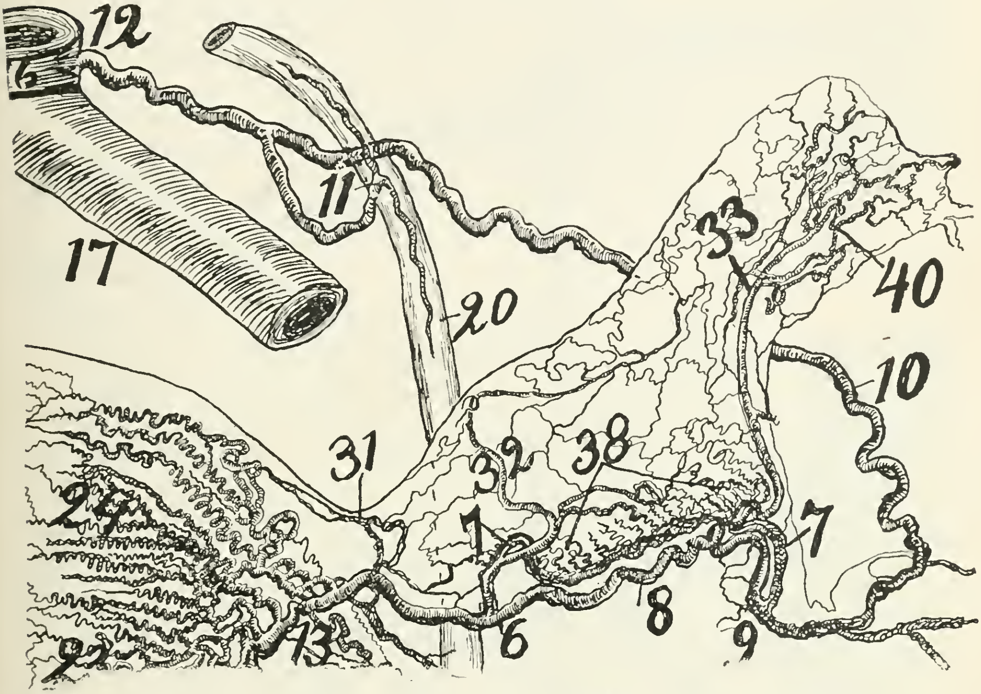
In this article attention is called to the almost constant macroscopic vascular arterial circle or vascular oval found in the mesosalpinx and ligamentum latum. It is formed by the ramus oviductus medially (proximally) and ramus ovarii externalis (distally) which converge laterally at the oviducal pavilion and medially at the utero-oviducal angle while the branches may be widely-sepearated in the centre of the vascular circle. The periphery of the ovarian vascular circle, *i.e.*, the ramus oviductus and ramus ovarii may lie practically parallel or pass over each other. This ovarian vascular circle prevails generally among lower animals. The ovary, is the central organ of this vascular circle.



DRAWN FROM AN X-RAY OF THE OVARIAN VASCULAR CIRCLE OF AN INFANT ONE DAY OLD.

Fig. 1 (Author). The subject was injected with starch and red lead, and an X-ray taken in Dr. Pratt's X-ray Laboratory. The bilateral ovarian vascular circle, 6, 8, 9; 6, 7, 9; 9, 10, 11 the ovarian segment of the utero-ovarion artery. (Figure 7 should be placed on the ramus ovarii midway between 6 and 9. 1, 2, 3, 4 pelvic floor segment; 4, 5, 6 uterine segment; 6, 8, 9—6, 7, 9 the oviducal segment which is the ovarian vascular circle. 50 anastomosis between utero-ovarian and renal artery.

In some cases the circle is 6 to 8 inches in circumference which is composed of the ramus oviductus and ramus ovarii each being 3 to 4 inches in length. The oviducal segment is practically a vascular circle, however, oval-shaped in the living. This vascular circle begins at the utero-oviducal angle, the middle bifurcation of the utero-ovarian artery and ends at the pavilion, the proximal bifurcation of the ovarian segment or the reverse. The circle constitutes practically the whole of the oviducal segment of the utero-ovarian artery.

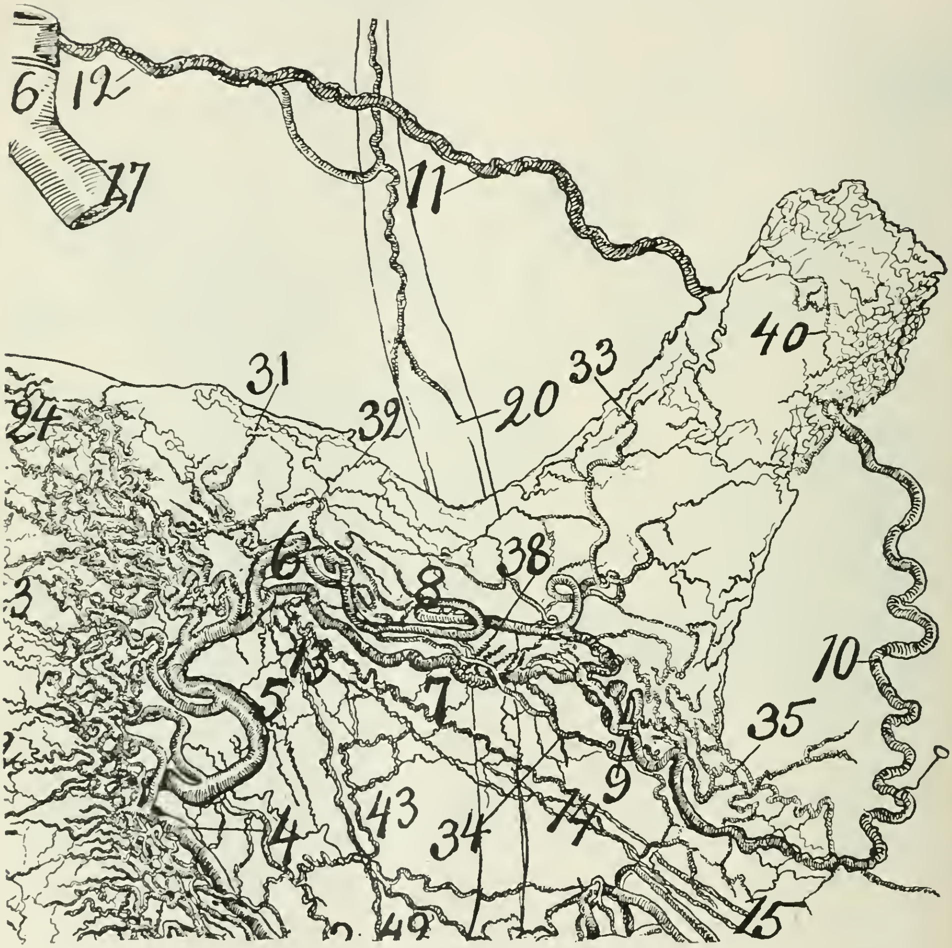


OVARIAN VASCULAR CIRCLE OF A 22-YEAR OLD NULLIPARA.

Fig. 2 (Author). Drawn from an X-ray taken in Dr. Harry Pratt's X-ray Laboratory, 6, 7, 7, 9 and 6, 8, 9 the ovarian vascular circle; 9, 10, 11, 12 ovarian segment; 6, 7, 7, 9 ramus ovarii (with some 8 rami laterales ovarii); 6, 8, 9 ramus oviductus (with 3 rami laterales oviductus); 20 ureter; 24 fundal arteries.

The oviduct or ovary can be removed without severing the ovarian vascular circle by clipping the mesosalpinx close to the oviduct or the mesovarium close to the ovary. The ovary is the central organ of this vascular circle and is fed by the long helicine arteries from the ramus oviductus and the short helicine arteries from the ramus ovarii emitted from the periphery of the circle. This should, therefore, be called the vascular circle of the ovary as it lies in the centre and is fed from the peripheries.

The oviducal segment has the shape of an arterial elipse, a vascular circle, from the periphery of which emerges lateral branches to supply the ovary oviduct and adjacent structures as the mesonephros, mesometrium. The oviducal segment divides practically into three branches to supply the oviduct (rami laterales oviductus), ovary (rami laterales ovarii) and round ligament (ramus ligamenti teritis . The mesosalpinx and mesometrium and mesonephros being supplied by



OVARIAN VASCULAR CIRCLE.

Fig. 3 (Author). Parous woman, 30 years old. Drawn from an X-ray taken in Dr. Harry Pratt's X-Ray and Therapeutic Laboratory. 6, 8, 9—6, 7, 9 the ovarian vascular circle; 6, 7, 9 ramus ovarii (presenting 4 rami laterales ovarii), 6, 8, 8, 9 ramus oviductus (with 3 rami laterales oviductum), 9, 10, 11 and 12 ovarian segment, 4, 5, 6 uterine segment, 13, 14, 15 round ligament segment, 20 ureter, 40 rich vascular net work adjacent to ampulla and pavilion.

fine lateral branches, rami ligamenti lati and rami mesonephros. The uterine and oviducal segments generally form a right angle with each other at their junction, near the origin of the round or ovarian ligament.

Of the three almost constant branches of the oviducal segment the ramus ovarii is most spiral and looped, is much longer than the distance between its origins, while the ramus oviductus is scarcely spiral at all at its distal end, slightly flexuous, but not looped, at is proximal end. The branch of the round ligament is very flexuous and spiral and in pregnancy is looped apparently four times its length during the resting state. The location of the division or middle bifurcation of the uterine segment into the oviducal segment is very variable. The oviducal segment furnishes the artery to the oviduct which courses in a spiral state horizontally laterward between the blades of the mesosalpinx and emits the rami laterales oviductus.

BRANCHES OF THE OVARIAN VASCULAR CIRCLE.

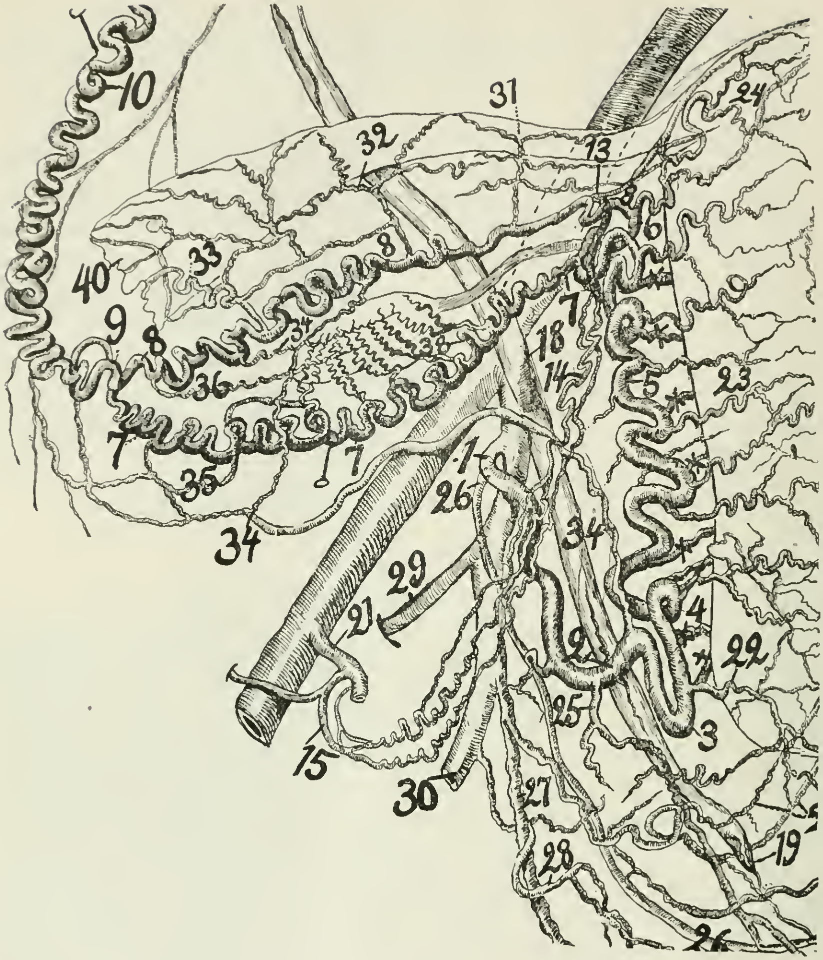
Helicine Arteries.

a. The long helicine (rami laterales ovarii longi).

The ramus oviductus may send two or three lateral ovarian branches (long helicine) which are longer than the short helicine from the ramus ovarii. The long ovarian helicine arteries from the ramus oviductus to the ovary at the first arise as non-spiral until they approach the external pole of the ovary. The long ovarian arteries (helicine) from the ramus oviductus stand in contradistinction to the short ovarian (helicine) arteries from the ramus ovarii. In the child I have found 3 long non-flexuous arteries from the ramus oviductus to the ovary. The long helicine arteries (3 generally) from the ramus oviductus show some spirality but chiefly flexuosities. Besides the general half-dozen short helicine arteries destined for the ovary from the ramus ovarii and the generally 3 long helicine arteries destined for the ovary from the ramus ovarii I found irregular branches not exactly alike in each individual, supplying the extra ovarian arches. These irregular branches may make one or more arcs and arcades, in the ligamentum latum (see chart Nos. 34 and 35). I found similar irregular loop arcs and branches in the cow, dog, cat and rabbit.

b. *The short helicine* (rami laterales ovarii brevis).

The short helicine arteries (generally 5 to 7) arising from the ramus ovarii show a marked spirality. Both long and short helicine arteries converge as they approach the ovary. They divide dichotonously. The cow shows 5 short helicine arteries from end divisions of the ova-



OVARIAN VASCULAR CIRCLE DURING GESTATION.

Woman pregnant 3 months.

Fig. 4 (Author). Fig. 3. A dissection of the right side. I injected it in situ with vermilion and celluloidine, after which I carefully dissected it under alcohol. The prominent factors are the distal arterio-ureteral crossing (2) arterio-ureteral loop (2), the cervical loop (3), which was exactly 2 inches long at 3 months gestation, the distal arteria ureterica. The ovarian vascular circle (6, 7-7, 9) (6, 8-8, 9), the rami laterales oviductus 31, 32, 33. The ovarian segment (10); the additional vascular arches, 34, 34, 35 persisting from the Wolffian body. The long helicine (36), and the short helicine (38) arteries passing to the ovary; 13, 14, 15, the round ligament segment; 30, internal pubic; 26, vaginal artery.

1, 2, 3, 4, pelvic floor segment; 4, 5, 6, uterine segment; 6, 7, 7, 9—6, 8, 8, 9, oviducal segment; 6, 7, 7, 9, ramus ovarii (with 5 rami laterales oviductus and 3 long helicine arteries). (Cut taken from Author's article in the *Am. Gynecol. Jour.*, J., Dec., 1901.)

rian segment. In her the ovary is supplied directly from the ovarian segment without the intervention of lateral branches. The (5 to 7) short helicine arteries (rami laterales ovarii) converge as they pass through the mesovarian to the ovary. The X-rays shows quite regularly 4 to 5 in number in man. The ramus ovarii gives origin to helicine arteries of which the most external anastomose with the ramus oviductus or the ovarian segment. The helicine arteries are practically all parallel. The ramus ovarii founds sub-ovarian arcade which may emit nearly all the rami laterales ovarii.

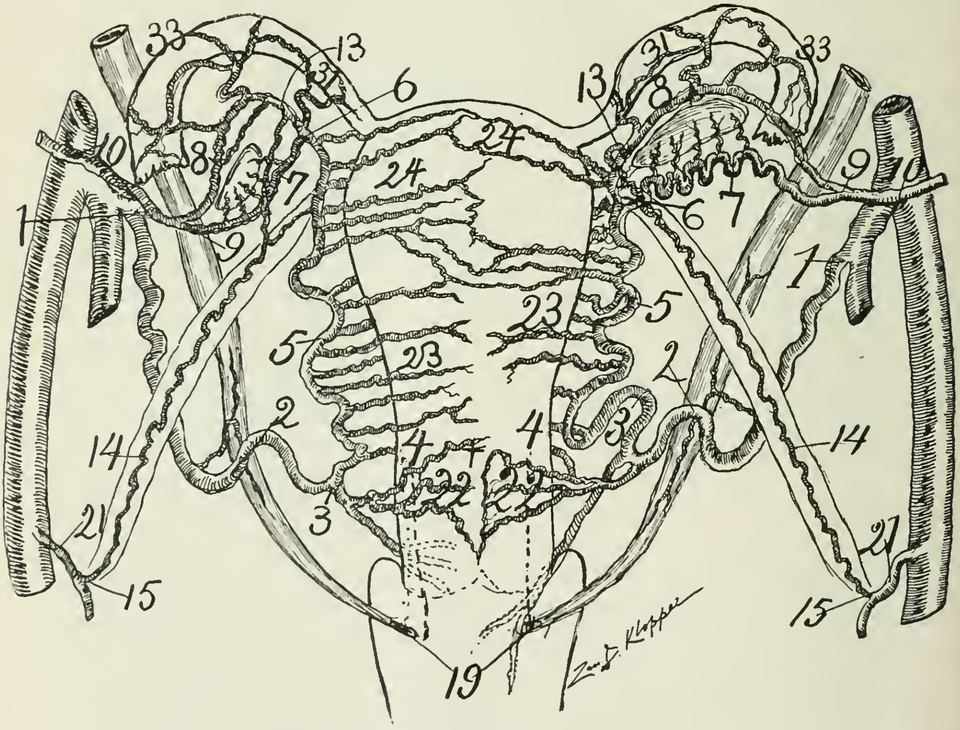
c. *Rami Laterales Oviductus.*

The arteries which supply the oviducts are generally 3 in number, viz.: one large one supplying the pavilion and proximal ampulla. An artery of less dimension supplying the junction of isthmus and ampulla. Finally, a third artery of still smaller size which supplies isthmus oviductus.

d. *Extra Ovarian Arcs and Arcades.*

In the region of the ovary there exists a variable number of extra vascular arches especially belonging to the ramus ovarii. These extra vascular arches are located in the ligamentum latum and ligamentum suspensoriun ovarii. The ovary is the last organ developed in the Wolffian body, and hence its vascular arcs and arcades are more persistent, consequently, when the important sexual gland, the ovary, passed distalward due to erect attitude, the persistent vascular arcs were transported with it to the lesser pelvis. I shall adopt the term *extra ovarian vascular arcs,* as the most appropriate. The signification of the ramus ovarii in the extra ovarian arcs lies in the fact that it emits the greater number of branches to form the arcs, that the chief anastomoses of arcades is closely adjacent to the same and nearly all of the rami laterales ovarii may arise from the extra-ovarian arcs. As proof that the extra-ovarian or sub-ovarian arcs and arcades are persistent vascular arches from the Wolffian body we can say that the arcs and arcades may be formed by branches from the 5 segments of the utero-ovarian artery, viz.: Pelvic floor, uterine, oviducal, ovarian, and that of the round ligament. The extra ovarian arcs or arcades in my dissections were formed by branches from (*a*) the ramus ovarii, (*b*) from the pelvic floor (segment), (*c*) from the rami laterals ovarli (short helicine), (*d*) from the ramus oviductus; (*e*) from the ovarian segment, (*f*) from the round ligament segment (*g*) from the uterine segment, and (*h*) from the external lateral ovarian and proximal long helicine which forms the extensive vascular net work at the oviducal pavilion. The pavilion vascular net work anastomoses with the extra ovarian arcs and arcades. Thus the extra ovarian arcs are solidly and compactly bound by anastomoses with every segment of the utero-ovarian artery.

The extra ovarian arcs and arcades may consist of one branch producing one vascular circle or arcades through anastomosis of many branches producing as high as 8 vascular arcades through anastomosis. These arcades are located in the liamentum latum between the ovary and ligamentum suspensorium. In other words, the extra ovarian arcades are located mainly at the junction of the ovarian segment and oviducal segment in the region of the ovary. I shall consider the extra ovarian arcs and arcades as simply additional persistent genital arches from the Wolffian body due to late development and importance of the ovary. They are practically located in the region of the ovary. As the ovary is one of the last organs perfected in the Wolffian body it carried with it distalward to the ligamentum latum the last formed arcs and arcades.



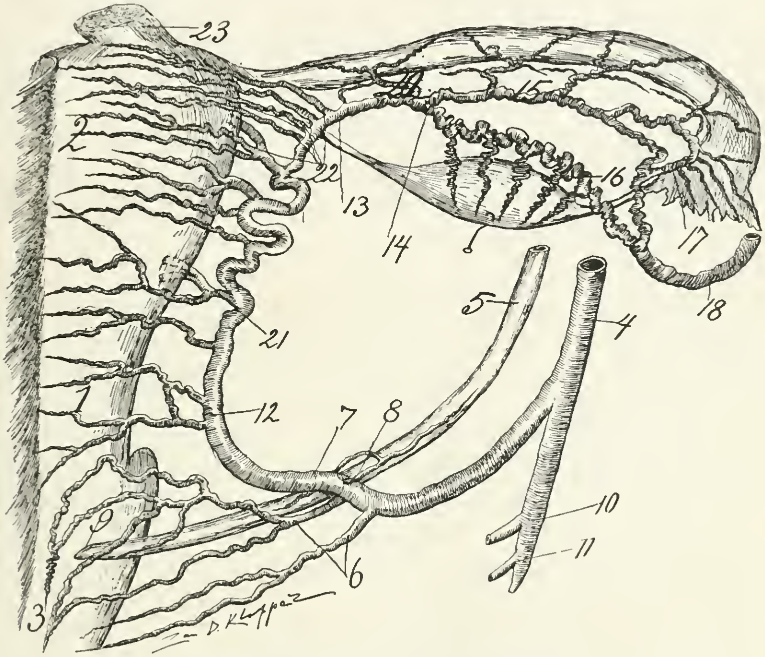
THE OVARIAN VASCULAR CIRCLE.

6, 7, 9—6, 8, 9, bilateral.

Fig. 5 (Author). This was carefully dissected from a woman, 55 years old. There were 3 myomata in the fundus and corpus which accounts for the persisteny of the large rami laterales uteri and large ramus oviductus and large ramus ovarii (6, 7, 9).

The chief branches of the extra ovarian arcades are:—one from the Pelvic floor segment, and one from its ramus ovarii.

The best way to realize the richness of the blood-supply to the ligamentum latum, ovary and oviduct is to inject with red material the utero-ovarian artery of a very spare subject (man or animal) and then hold the injected membrane (better dried) between the eye and the sunlight when a luxuriant blood-supply may be observed. Subsequently, a more wealthy blood-supply may be observed in the same ligamentum latum by placing it after drying, in balsam, when the opaque tissue of the ligamentum will be cleared exposing fields of innumerable fine vessels.



OVARIAN VASCULAR CIRCLE.

10, 15, 17 and 10, 16 the vascular circle, the small hook draws its ovary out of the circle.

Fig. 6 (Author). Woman, abut 55. Front view. I slowly dissected out the vessels drawing them in accurate relations after which Mr. Klapper drew from the plan. A myoma about the size of a pigeon's egg existed on the fundus. The pedicle 23. This tumor made the 5 fundal arteries remain very large. 1. cervico-vaginal; 2. lateral corporeal branches; 3. very large vaginal branches (arteria ozygos vaginæ); 4 hypogastric; 5, ureter; 6, vaginal arteries; 7, distal arterio-ureteral crossing; 8, arteria ureteris; 9, ureteral opening; 10 and 11, branches from hypogastric; 12, exit of cervico vaginal; 13, uterine segment immediately before it divides into the ramus oviductus (15), and ramus ovarii (16); 14, point of division of uterine segment; 17, 20, lateral oviducal branches; 18, ovarian segment; 21, lateral corporeal branch which divides dichotomously sending a branch to anterior and posterior uterine surface; 22, rami fundi. The corporeal and cervical branches were atrophied, the vaginal arteries were not. The fundal branches were enlarged from myomatous irritation .

The X-ray of a well injected spare ligamentum latum shows a luxuriant blood supply superior to all other methods. Spare dogs and other animals show rich blood supply in the ligamentum latum and adjacent structures when well injected with red material and dried. The fine spiral ramifying vessels of the ligamentum latum may be noted coursing parallel and transverse to the surface of the oviduct, resembling those of the enteron and especially converging toward the ampulla and pavilion forming luxuriant and rich vascular net work. The exposure of the branches of the oviducal segment is the most certain with well injected X-ray specimens.

The Ovarian Vascular Circle during Gestation.

In the advanced pregnant state the ovarian vascular circle is large and beautifully distinct. A dissection demonstrates it better than an X-ray. In the illustration of the pregnant subject it is quite distinct. The long and short helicines are large and distinct. The short helicines were well likened to tendrills by Johannes Miller for they coil in markedly spiral states.

Summary in regard to the Ovarian Vascular Circle.

In the vast majority of subjects there is a distinct ovarian vascular circle. The ovarian vascular circle is composed of the ramus oviductus and ramus ovarii. The ovarian circle is practically the oviducal segment of the utero-ovarian artery, and is located in the ligamentum latum and mesosalpinx. The circle begins at the utero-oviducal angle, *i.e*, at the middle bifurcation and ends at the pavilion, *i.e.*, at th proximal bifurcation of the utero-ovarian artery. In a typical ovarian vascular circle the ramus oviductus emits 3 long helicine, while the ramus ovarii emits 5 short helicine to the ovary. The ovary is the central organ of the ovarian vascular circle which nourishes it by emitting branches from the periphery.

The ovarian vascular circle (the oviducal segment) allows the oviduct to be removed without severing it by incising the mesosalpinx close to the border of the oviduct. The ovary may be extirpated without severing the circle by incising the mesovarian close to the hilus.

THE USE OF HYOSCINE BEFORE THE ADMINISTRATION OF ETHER.*

BY

E. A. ROBERTSON, M.D.

Hyoscine hydrobromate is the hydrobromate of an alkaloid obtained from the plant Hyoscyamus niger, a member of the order Solanaceæ. The other members of the family used in medicine are Atropia Belladonna, Datura Stramonium, Duboisia myosporoides, and Scapolia Carniolica. From these plants are obtained the alkaloids atropine, hyoscyanine, hyoscine, and scapolamine, which have the same formula but differ in molecular structure and physiological action. It has been asserted that the hyoscine of commerce, which is a syrupy liquid, is obtained, as a rule, from Scapolia, and therefore is really scapolamine. Hesse and Merck say that scapolamine consists of two bases, hyocine and atrocine, and as the action of the latter alkaloid is unknown, it is important to know that the hyoscine used in the cases here reported is that made from hyoscyamus.

In man hyoscine hydrobromate produces:—

(1) Dryness of the mouth.

(2) Flushing of the face.

(3) Great drowsiness, deepening into sleep, and sometimes semidelirious muttering and dizziness.

(4) Diminished frequency of respiration.

(5) Diminished frequency of pulse.

(6) As a rule, hydriasis.

The action on the sweat glands, so powerful with atropine, is absent, and sweating is often seen, although I have never observed it in my cases. On the circulation it has little effect, if anything, it is a feeble heart depressant. It depresses the motor cord, but not the sensory areas.

It has been used in insanity, especially acute mania, as a hypnotic, and also as a depressant of the sexual centres in sexual excitement. It is said to have a good effect in the crises of locomotor ataxia.

According to the latest edition of Wood's Therapeutics, no fatal case of poisoning has been reported, though in several cases it has been stated that alarming symptoms have been caused by comparatively small doses of the drug. It would seem from the literature that certain individuals possess an idiosyncrasy to hyoscine as is the case with atropine. The concensus of opinion by those who have used it most extensively is that it is not dangerous: one-quarter grain has been taken with no greater effect than a prolonged sleep. The dose is set down as from 1-150 to 1-80 of a grain.

---

* Read before the Montreal Medico-Chirurgical Society, May 16, 1902.

If we can rely upon statistics, ether is a safer anæsthetic than chloroform or any other anæsthetic for long operations. It possesses certain disadvantages, however, which it would be desirable to overcome. In the second stage there is a tendency to delirium and excitement. It produces profuse secretions from the mucous membranes of the nose, mouth, larynx, trachea, and stomach, with resulting obstruction to respiration, decreased äeration of the blood, and as a result rigidity of the muscular system. During recovery from ether there is often restlessness and even great excitement, and, worst of all, especially after a severe abdominal operation, intense nausea and vomiting.

With the object of preventing or lessening these disagreeable effects, I have experimented with two drugs, chloretone and hyoscine hydrobromate. In the case of chloretone, my results were not encouraging, and I abandoned it. It is possible that I did not give it a sufficient trial. The results from hyoscine have been more favourable, but I wish to state distinctly that my experiments have been few, and that I do not claim that they are conclusive. I simply wish to report the results in my cases, with the hope that others who are in the habit of giving ether will try the drug and report results.

I give 1-100 of a grain of hyoscine hydrobromate hypodermically, one-half hour before the administration of ether. I have given it so far in fifteen cases, in all of which the Clover's inhaler has been used. In general terms, I have found it to produce the following results;—

The patient, half an hour after the injection, is calm and drowsy (in one case asleep). The pulse is slow and full, the respirations quiet and regular, the mouth dry, and as a rule, the pupils slightly dilated, though reacting to light. The patient takes the ether quietly and without struggling, and quickly becomes unconscious. There is little or no secretion of fluid from the mouth or respiratory tract. There is no rigidity and no cyanosis. The face is usually red. In from three to five minutes the patient is lying as if calmly asleep. Anæsthesia is then maintained with a very small expenditure of ether, and during the operation there is no vomiting or obstruction to respiration from secretion of fluid in the respiratory passages. Tho patient recovers consciousness rapidly, but during the first twelve hours after the operation is quiet and has frequent periods of sleep. Vomiting in a large proportion of cases is absent, and in no instance was it severe or prolonged. Nausea is much lessened. The mouth is for some time dry and thirst is complained of.

No symptoms of danger have as yet occurred. In all the cases the pulse was slow and full, and the respirations remarkably easy and satisfactory. The results in detail are as follow:—

The hyoscine was given in fifteen cases, all females, the Clover's inhaler being used. Nine cases were major oprations, abdominal sections. Four cases were plastic operations. One case was an examination of the bladder.

The amount of ether used averaged a fraction over 2½ ounces an hour.

The longest anæsthesia was three hours and thirty-three minutes, the shortest, fifty-six minutes.

The smallest amount of ether used was 5½ ounces for an operation which lasted two hours and a-half. The largest amount was 9¼ ounces in three hours and eleven minutes.

There was no cyanosis and no vomiting during the administration of the anæsthetic.

In thirteen cases there was no excitement or struggling during the anæsthetization. In two cases there was some fear shown at the outset, but as soon as regular inhalation was induced all excitement ceased.

The pupils in five cases were dilated. In the others they were neither-contracted nor dilated.

In no case did the pulse rise in frequency over 116 to the minute, though several operations were very severe ones. In one case the pulse was slowed to 64, and in two cases to 68. The average pulse rate was about 84.

The respirations in one case increased to 44 and in one case were 16; they averaged 28 to the minute in all the cases.

There was 'no cyanosis in any case. There was no obstruction from mucus.

In one case, at the close of the operation, as the patient was coming out of ether, there was muscular rigidity and tremor.

The average time which it took to produce surgical anæsthesia was 5½ minutes. The shortest time was 3 minutes and the longest 10 minutes.

In no case was there excitement during recovery from the anæsthetic. In all cases there was drowsiness after the operation with frequent sleep during the night.

In ten out of the fifteen cases there was no vomiting after the anæsthetic. Three vomited very slightly. One vomited once several hours after the operation. One vomited five or six times. In the fifteen cases preceding these, and in which hyoscine was not used, three patients did not vomit and twelve did, one severely.

In conclusion, I may say that the nurse who has had charge of the patients immediately after operation, and who has had an opportunity of observing in a long experience hundreds of cases, has noticed a distinct amelioration of the distressing symptoms usually following the administration of ether, since the hyoscine has been used.

My own belief, after an experience of over 500 cases of anæsthetization by Clover's inhaler, is that hyoscine hydrobromate makes the administration of ether easier and the after effects much less serious. A large number of cases are required to establish my belief as a fact, but I hope that the anæsthetists of Montreal will give hyoscine a trial and report their results.

A CASE OF FŒTUS AMORPHUS ANIDEUS.

BY

RIDLEY MACKENZIE, M.D., AND JOHN MCCRAE, M.B.

The clinical history is of but little interest. The patient from whom the specimen was obtained is of English birth, age thirty, a multipara. Her previous pregnancies were uneventful, and one of them plural. She was delivered after a tedious labour at full term of a living, poorly nourished female child. The whole period of gestation was one of distress, with vomiting and general weakness. The patient has mitral stenosis with hypertrophy and dilatation, and is very anæmic. The urine also contained albumen and casts. The Anidean fœtus and the single placenta were expelled together, having a common amniotic sac and the cords a marginal insertion.

The puerperium was normal.

The placenta was of the usual colour, and measured 18 x 13 x 3.5 cm. The cord was tied at 35 cm. length; the membranes seemed complete. Close to the attachment of the cord was a second miniature cord 6 cm. long, at the end of which was a pinkish brown mass 3 x 2.5 cm., ovoid in shape, firm in consistence, an indistinct hard mass in its centre. The twist of both cords is in the same direction, and on holding the lesser cord up to the light, several small vessels are seen indistinctly, one of which at least joins the larger cord. The chorion common to both is reflected from the larger to the smaller cord, and in the web between the two, the vessel runs. The miniature cord has a consistence, colour and degree of twist similar to the larger one.

The surface of the foetus, by the aid of a hand lens, can be seen to be covered by fine hairs, which do not seem more plentiful on one pole than the other. On section the cuticle (if it may so be called) seems more resistant than the tissue underlying it, and the firm mass in the centre is mainly cartilage of irregular shape, interspersed by small irregular, pin-head-size areas of spongy bone (which may represent centres of ossification); the tissue surrounding the cartilage is fibrous, connective tissue, plentifully interspersed by muscular fibres. Hair follicles are numerous at the surface, the true skin is represented by epithelial cells in layers two or three deep, the nuclei large and uncompressed. In places, the skin appears as a moderately dense matting of fibres, with few nuclei, resembling rather a fibrous capsule than a true skin.

The nourishment of the fœtus has been carried on by an artery and vein in the cord, one of which (presumably the artery) joins the larger cord; it is doubtless through this vessel that the circulation of the amorphus fœtus has been kept up; the only blood vessels seen in the fœtus are large, thin-walled veins and sinuses, lined by endothelium of the ordinary type.

This fœtus belong to the class defined in a recent article by Ballantyne ("The Fœtus Amorphus," in *Teratologia*, April, 1894), as "Fœtus Amorphus Anideus" : This may be defined," he says, "as an allantoido-angiopagus twin which has entirely lost the external form proper to the fœtus, and consists of an ovate or rounded skin-covered mass, without indications of limbs." The condition is a rare one: in nineteen cases quoted by Ballantyne in the above-mentioned article (which reviews thoroughly the literature), it will be noted that the size of the fœtus is much greater than in the case described here, the smallest of those quoted being 5 x 4.5 cm.

Notwithstanding the smaller size, and the apparent disorder and shapelessness of the internal structures, the case falls in every essential under the Anidean group of Fœtus Amorphus.

INFARCTION OF THE ADRENAL.

BY

PAUL G. WOOLLEY, B.S., M.D., (J.H.U.),
Fellow in Pathology, McGill University.

In all the history of the pathology of the adrenal glands I have been able to find no records of a case like the one that I shall report.

This case was that of a pauper child, female, and eleven months old, who, previous to death, had had measles, and had been suspected at the time of death of having some throat trouble. At autopsy there was no sign of a lesion referable to the invasion of the diphtheria bacilli.

When the abdominal cavity of the child was opened, a mass was seen in the right renal region, which had the appearance of a hæmatoma. The tumour was about the size of a goose egg and was quite firm in consistence. On closer examination it was found that the right adrenal was embedded in this mass and that the organ showed no sign of rupture, in other words, that the hæmorrhage did not come from the gland. The source of the hæmorrhage could not be ascertained. The right kidney was outside the hæmatoma.

The adrenal body was slightly enlarged and firm, but very dark in colour—almost black, as from hæmorrhage. On section, the lines of the medulla and cortex could be seen with difficulty, and the entire substance of the gland was of practically the same colour. In the medullary portion, and corresponding to the position of the central vein, was a large, round, whitish mass, in size about that of an ordinary match, which had all the macroscopic appearances of a thrombus. The whole length of the central vein was obstructed.

The left adrenal showed some hæmorrhagic spots, but was otherwise fairly normal.

On microscopic examination the proper tissue of the gland seemed to have been completely replaced by hæmorrhage, except for the presence of occasional columns of stained nuclei, the sole remaining evidences of gland substance.

The thrombus was a laminated fibrinous one, with only few leucocytes present, and with little evidence of cellular structure. There were no bacteria in it.

Just outside the cortex of the adrenal and situated in the capsule of the gland, were two small accessory glands, appearing almost normal microscopically, and showing no evidences of hæmorrhages or necrosis. In the middle of the large gland was another small nodule, encapsulated and apparently normal. All of these smaller glands must either have had a blood supply of their own, or have been nourished by a collateral circulation, which had been insufficient for the large gland. The origin of the thrombus could not be decided, it was probably marantic and it was not all organized.

The case is an unusual one, not because hæmorrhage into the adrenal is uncommon, for it is not, cases of hæmatoma and blood cysts having been reported by several observers; for instance, by Carrington, Routier, Cestan, Déroubaix, Letulle, Reclus, Fleischer and Pensoldt, Spencer and Wainwright, whose cases are referred to by Rolleston, but, especially, because it is a case of infarction of an entire organ, and such an intense infarction. Welch says, that "if the veins are obstructed to render the outflow nil, or very small, and the arteries are open, the infarction is intense." Here the vein has apparently been completely blocked, and the infarction has been, as we should expect, intense. He also says that, "in consequence of abundant anastomoses this mode of infarction is rare, but it may occur after thrombosis of the mesenteric, the splenic, and the central retinal vein." To this category we may now add the central adrenal vein.

Note.—Since writing the above I have found a paper by Blaker and Bailey in the *British Medical Journal* for July 13, in which four cases of hæmorrhage into the adrenals are discussed. In these cases the most remarkable features were sudden onset, rapid course and sudden termination. In all the cases there were subcutaneous hæmorrhages. All had diarrhœa, or vomiting, or both. A toxic origin is suggested for this symptom complex, which is possibly a disease *sui generis*.

In the case here reported the details were meagre, but the child had been ill with a disorder that suggested at one time measles, at another diphtheria. This is, however, the only case in which infarction is reported.

REFERENCES.

Welch—Embolism, Thrombosis, Allbutt's System of Medicine, London, 1899.

Rolleston—*Brit. Med. Jour.*, June, 1895.

Carrington—*Trans. Path. Soc*,, London, 1885, XXXVI., 454.

Deroubaix—Contribution a l'etude de l'hémorrhage de capsules surrenale, Paris, 1884.

Morris—Surgical Diseases of the Kidney and Ureter, London, 1901, Vol, II., 15.

Worthin—*Arch. of Pædiat.*, November, 1902.

Reviews and Notices of Books.

THE CAUSES OF DEATH AMONG THE INSURED IN THE SCOTTISH WIDOWS' FUND AND LIFE ASSURANCE SOCIETY, FROM 1874 TO 1894 INCLUSIVE, reported by CLAUD MUIRHEAD, M.D., F.R.C.P.E., Medical Officer of the Society. R. and R. Clark, Edin.

This report contains a very interesting study of the causes of death in this society during the three septennia, 1874-1894. The report refers only to males, amongst whom there were 9,163 deaths during this period.

Cases of consumption were responsible for 8.796 per cent. of the total mortality, and it is satisfactory to note the percentage decreased during each septennial period, and the average age at death was also rather greater during the later periods. The benefit of selection is shown by a comparison of the mortality in the Society from this cause, with the mortality amongst the general population. The results show a percentage considerably under half the mortality amongst the general population. Hereditary influence, according to Muirhead's tables, does not exert any great influence on the mortality from phthisis. It is, however, hardly fair to draw the inference that hereditary predisposition plays an unimportant part in the mortality. The criticism may be made that the tables do not deal with the large numbers of cases rejected for a tubercular family history, and until the mortality amongst this class is known, a fair basis for comparison does not exist. The report shows that the mortality from consumption is greater amongst light than heavy individuals, whilst the reverse holds good for apoplexy.

The subject of cancer is dealt with in considerable detail, and the increasing mortality from this disease is pointed out.

The report is a most valuable compilation and must prove of much value as a guide to medical directors in the selection and rating of lives. It is much to be desired that other offices should follow the example of the Scottish Widows' in publishing their experience and so placing life insurance on a more certain and scientific basis.

F. G. F.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, April 4, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Dr. C. B. Keenan, of Montreal, was elected a resident member.

Morbus Coxæ.

Dr. E. M. Von Eberts showed for Dr. Armstrong, a young man, aged 20 years, French Canadian, born in Quebec, but living in Montreal since ten years of age. He had had no other illness except the hip disease. The father and mother were both healthy and there was no history of tuberculosis in the family.

The present trouble began with an injury to the left knee by a fall at two years of age. He was confined to bed for two years with the leg in a position of semi-flexion at the knee joint. Six months after the injury, while in bed, he developed pain in the right hip extending down to the knee. Six months later, at the age of three, an abscess developed over the head of the right femur and eventually ruptured in three places, the discharge continuing until seven years of age. When four, or four and a half years old he was able to get up with his left hand resting on his left knee and walked about, the knee being flexed. He had good health until he was 16, when he fell from a street car and broke the left femur at its lower third and dislocated the left knee joint. After treatment for 41 days in the Notre Dame Hospital he was discharged well.

Examination shows a normal condition of the internal organs. The arms are very well developed by the use of crutches; the right leg is flexed, adducted, slightly rotated inwards, almost fixed at the hip joint, and shows very much wasting both at the thigh and calf. The left leg is more wasted than the right, knee joint fixed at an angle of 90°, not capable of being extended, but may be flexed to 45°. The femurs are equal on both sides. The shortening is apparently due to dislocation of the head of the right femur on to the dorsum of the ilium. A skiagraph shows that the remains of the head and neck of the right femur still occupy the site of the acetabulum, and the lengthening on the left side is due to marked tilting of the pelvis from 4 to 4½ inches, bringing the neck of the left femur almost in a direct line with the shaft of the bone.

Primary Intestinal Tuberculosis.

Dr. A. G. Nicholls read a report of this case. See page 327.

Dr. James Stewart said that when the patient was admitted to the medical wards there was apparently clear evidence of meningitis and it was looked upon as syphilitic because of the marked syphlitic history and the absence of any other cause. No doubt an acute syphilitic meningitis was a very uncommon trouble.

Stated Meeting, April 18th, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Sarcoma Cured by Repeated Operations.

Dr. F. J. Shepherd showed a patient, female, from whom he had on April 4, 1901, removed a growth in the right side of the neck extending almost from the clavicle to the mastoid process and covered with a thin bluish skin. The tissue, which proved to be sarcomatous, was scooped out through a long incision, and it was found that the underlying tissues were all involved. After the operation the wound was closed, a drain inserted and it quickly healed. Three weeks later she returned with the mass as large as ever and a second removal was done, followed by healing so rapid that it was amazing. Some weeks later she again returned, and, in Dr. Shepherd's absence, Dr. Kenneth Cameron made an incision and removed the soft fungating mass just as had been done on the former occasions. By July, the wound had healed again, and now nearly ten months afterwards, the neck appeared perfectly normal. The patient had stated that the area affected by the growth had remained red, indurated and swollen for some months and had then gradually disappeared. The tissues removed on each occasion had been examined by Drs. Johnston and McCrae, and the microscopical appearances were typical of alveolar sarcoma.

Dr. Shepherd stated that one other similar case had come under his notice some years previously, when he had assisted a colleague to shell out a tumour which Dr. Osler had pronounced small-celled sarcoma. The wound had healed in the same way and the growth recurred six months later in the submaxillary glands, which were removed. The patient was alive to-day, 15 to 20 years later.

Vesical Calculus with Pyonephritis in a Child.

Dr. Anderson showed for Dr. MacTaggart a specimen of vesical calculus with pyonephrosis. The child, aged 2½ years, had been admitted to the Montreal General Hospital in September, suffering apparently from rickets. Under appropriate treatment the child rapidly improved and was discharged apparently cured. A couple of months later it was readmitted, badly nourished and badly cared for. The temperature was very high, and on several occasions the child had a prolapse of the rectum which was immediately reduced by the nurse in charge so that the attending physician had never seen it.

At the autopsy there was found in the bladder a large phosphatic calculus, 3½ by 2½ c. m. filling up the whole organ. There was purulent cystitis and pyonephrosis with markedly dilated ureters.

Two Cases of Carcinoma of the Stomach.

Dr. D. P. Anderson showed a specimen from a case of carcinoma of the stomach upon which Dr. Armstrong had performed a gastroenterostomy. The patient, a man aged 48 years, had refused operation until the disease had progressed so far that its removal was impossible. He lived for eleven months after the operation.

A remarkable feature of the case was that at the time this patient was operated upon, his twin brother expressed his belief that he had the same disease. Both men had been suffering from gastro-intestinal condition for years, and in the case of the second one, the symptoms were looked upon as nervous in origin. Some time later, however, the case was proved to be carcinoma, and a gastro-enterostomy performed by a New York surgeon, the patient surviving the operation two months. The specimens exhibited were obtained by a medical student who was present at the autopsy. The age of the patients, 48, was remarkable.

Dr. F. G. Finley believed that the age of these patients mentioned was 38 instead of 48, making them still more remarkable. The second of these patients had been under his case for a time, complaining of pain in the epigastrium not always associated with the taking of food. There had been no tumour or distension, but persistent absence of hydrochloric acid as shown by a number of test meals. Lactic acid was demonstrated on one occasion. As the probabilities were in favour of cancer the patient was advised to have an exploratory incision, but as his condition improved he would not consent. It was possible that if the exploratory operation had been undertaken when advised that the disease might have been removed.

Spinal Localization in Connection with Spinal Fracture.

Dr. D. A. Shirres read this paper, which will be published in full in a later issue.

The President congratulated Dr. Shirres upon his working up of his subject. A number of these cases of accident involving the spinal cord were admitted to the hospital every year, and he had succeeded in treating one case successfully. The case was that of a man who received an injury at the level of the tenth or the eleventh dorsal vertebra which caused paresis of the muscles. Manipulation and extension with the aid of two orderlies succeeded in reducing the apparent deformity, and the paresis gradually passed off. Experience gained previous to this case had caused the speaker almost to make up his mind never to operate when there was complete motor and sensory paralysis. This case, however, and the published reports of experience at the Massachusetts General Hospital showing that improvement followed interference in some unlikely cases, had caused the speaker to decide that until it was shown that operation did harm in these cases it was the duty of the surgeon to expose the seat of injury in the hope of doing good.

Stated Meeting, May 2nd, 1902.

G. E. ARMSTRONG, M.D., PRESIDENT, IN THE CHAIR.

Recovery after Operation for Typhoid Perforation.

DR. F. J. SHEPHERD exhibited a patient upon whom he had operated on May 27, 1901, for typhoid perforation. The patient, a lady, 29 years of age, had been under treatment in the private medical wards of the Montreal General Hospital, and during the second week of the fever, and without any previous symptoms of severe ulceration, the perforation occurred. A diagnosis was made at once, and twelve hours later the abdomen was opened in the usual way by a lateral incision over the ileo cæcal junction. After closing the ulcer the abdomen was washed out with saline solution, but a good deal of suppuration followed with the result that there was a hernia at the site of the wound, and the patient was wearing a truss. She made an uninterrupted recovery.

Dr. Shepherd expressed his preference for the lateral operation as giving access to a part of the intestine where one was most likely to find the perforation, near the ilecocæcal valve, whereas by opening in the middle line it was not possible to tell what part of the small intestine presented, and often many feet of bowel had to be pulled out before the lesion was found.

Dr. Shepherd further stated that the first successful operation for typhoid perforation which he had performed had been in October, 1900, upon a patient of Dr. Ridley Mackenzie's, who recognized the condition and sent the patient at once to the hospital. The operation was done ten hours after perforation and there was free pus found in the abdomen, which, however, was sterile. His second case was the one reported above, while the third, also a patient of Dr. Ridley Mackenzie's, was operated upon on July 4, 1901. Perforation had occurred in the third week of disease, and operation was done two hours afterwards. The man had been very ill after operation, his temperature rising to 104°, but he recovered without any hernia.

DR. RIDLEY MACKENZIE said that the two cases under his care had been utterly different. The first was a woman with ambulatory typhoid who had been unwilling to take care of herself, and, consequently, he had refused to attend her. Later, he received a message that the woman was dying, and found a condition of general peritonitis some eight hours after perforation. The second case had been under careful treatment from the first.

DR. ELDER corroborated what Dr. Shepherd had said about the lateral incision being the proper one in these cases, as the ulcer was nearly always found within a short distance of the ileocæcal valve.

Cholelithiasis.

DR. CAMPBELL HOWARD read the report of this case for DR. ELDER. It will be published in full later.

DR. ELDER said that the case was briefly, that the woman had a mild attack of typhoid fever last year, left the hospital, gave birth to a child, and returned to hospital in April for repair of the perineum, when she developed pain and high temperature. She got better and left the hospital again, but five days later was seen by Dr. Bazin, who made a diagnosis of gall bladder trouble. When she was admitted there was a tender point just to the right and above the umbilicus, with evidence of localized peritonitis about the gall bladder. At the operation a very much distended gall bladder full of clear mucous fluid was found with a stone in the cystic duct near its junction with the common duct.

Dr. Elder pointed out also that where the stone consisted of several small calculi glued together into one mass there was associated perulent condition. He had written to Mayo Robson enquiring whether he had any knowledge of this point but received a negative reply. He also drew attention to a method of performing the operation different to that usually employed. After the gall bladder had been exposed two silk sutures were passed through it in the usual way to hold it in place while making the incision. The gall bladder was then examined, the calculus removed and a drainage tube inserted, when instead of stitching the gall bladder to the peritoneum the sutures were passed through the whole thickness of the abdominal wall some distance back from the second incision and on each side. After the second incision had been closed, the sutures were tied and left there.

Five days later the sutures were cut and removed and the fistula closed much more quickly than was usually the case.

Dr. Bazin said that an additional point of interest in the case was that since the attack of typhoid fever the patient had been living a sedentary life, earning her living by sewing in a damp underground cellar. Three days after she left the hospital for the second time he had been called to see her, and found her suffering from severe pain in the gall bladder, which was enlarged to such an extent that it reached down to the level of the umbilicus. It must, therefore, have decreased considerably before she was admitted to the hospital for the last time.

Dr. Shepherd said that some ten or fifteen years ago the method of operation described by Dr. Elder had been extensively employed and he could not say why it had gone out of general use. He related a case in which after the removal of two large stones the fistula was healed and the woman out driving in ten days. The rapidity of healing depended upon what the gall bladder was sewn to, when attached to the peritoneum it healed very rapidly, but if brought out to the skin a fistula was liable to persist.

Aneurism of the Innominate Artery.

Dr. Maude E. Abbott showed a specimen of aneurism of the innominate which had been sent to the museum by Dr. Proctor. The aneurism arose from the neck of the innominate directly after its origin and the artery was very much distended. The left wall appeared to be preserved while the right wall had given way and a large false aneurismal cavity had formed which had eroded the clavicle in its outer portion.

Aniencephalus Monster.

Dr. Maude E. Abbott also showed an aniencephalus monster sent in by Dr. Dewar, of Ottawa. Skiagrams of the case were shown and enlarged diagrams of a case reported by Ballantyne which closely resembled the present case.

Note on a Rapid Blood Stain.

Dr. F. M. Fry described a rapid blood stain.

Lantern Demonstration of Skin Diseases.

Dr. F. J. Shepherd gave a lantern demonstration of various forms of skin disease, explaining and describing the conditions as the pictures were thrown upon the screen. The demonstration included a very beautiful series of variola, ringworm, sycosis barbæ, molluscum contagiosum and many others. Noticeable among them was a very complete group of tertiary syphilides.

Correspondence.

NO. X. CANADIAN FIELD HOSPITAL.

Head-Quarters, Canadian Field Hospital,
Kekewich's Column,
Vaalbank, Transvaal.

To the Editors of the Montreal Medical Journal.

As the 10th Field Hospital is the first Canadian organization of the kind equipped for service abroad, I trust a few remarks about the movements and work of the company may not be without interest to some of your readers.

Under the able supervision of the Director-General, the corps was formed in December last, given the most improved equipment as regards tents, transport wagons, (convertable into ambulances), general hospital appliances, and medicines, and accompanied the Canadian Mounted Rifles to South Africa.

Leaving Halifax January 28th, after an uneventful voyage (save for the occurrence of a few mild cases of smallpox and measles), we arrived at Cape Town February 21st, and were ordered to Durban. From there we proceeded to Newcastle by rail, and went into quarantine for two weeks, having in the meantime suffered much from divers quarantine officials in the way of vaccination, with varying success.

One day Lord Kitchener visited the camp and inspected the hospital, telling us we were to accompany the Canadian troops. At the expiration of another week, and after a very trying march through Laings Nek, we found ourselves at Klerksdorp ; this town is near the scene of Methuen's disaster, and the centre of all concerted action against Delarey, Kemp, DeWet and Co. General Walter Kitchener took a section of the hospital with four wagons for his columns, and the other, in response to a wire from Kekewich for 50 beds, was sent to Vaalbank, 40 miles away.

This being the angle on the Lichtenberg blockhouse line, on to which the various columns intended driving, a hospital was much needed at this point.

Here we are at present with a daily average of sixty patients and with very short notice of their arrival, as a glance at the following telegrams will show:—

"Convoy with 45 sick and wounded, Grenfell's column; leaving this morning, arrive to-morrow."

"Seventy-five sick arrive to-morrow."

"Notify O.C. hospital 80 wounded, including 24 Boer prisoners, leave to-day, arrive about fifteenth.

With the former convoys came all sorts of ailments, varying in severity from veldt sores to bad cases of enteric and dysentery. Various are the methods of treatment adopted by the different hospital and medical officers, for prevalent diseases, according to their proportion of success with different redemies. With veldt sores we have had most success by local treatment with moist antiseptic dressings (preferably boracic), until the sores look healthy, then dry dressing with aristol or boro-acetanilid. Internally, calcium sulphide, fairly large doses; change of diet (when procurable), with lime juice and vegetables. In cases of dysentery, we get best results with Henry's solution (mag. sulph., and acid sulph. dil.), one drachm doses every hour until the blood and mucus begin to disappear from the stools, then astringents with opium; or when the movements are very frequent hypodermics of morphia. Absolute rest is a most important factor in the treatment; a tablet composed of "three carbolates" (calcium, sodium, and zinc, 5 grains each) we have used with success in these cases and in enteric, but as yet not sufficently long to justify a decided opinion as to its efficacy. Enterics are certainly the most trying in Field Hospitals; they frequently come to us on ox-wagons, a distance of 25 to 40 miles in the second week of the disease, and as we are obliged to keep our wards as clear as possible for emergencies, it is often necessary to transfer them to Klerksdorp, a distance of 40 miles, from where they are again shipped by hospital train to Joeberg. Most of these patients, worn out by continued treking, and army rations, require stimulants early, and careful feeding. As we have no cots, they are placed on stretchers; one advantage being that in this way they can, owing to the convexity of the canvas, be readily sponged with the aid of a rubber sheet, and the water run off into a pan, by simply raising the end of the stretcher.

With the 80 wounded who arrived on the fifteenth, in accordance with telegram mentioned, came gunshot wounds of every description. As an instance of how severe many of these were, and of how vital organs may be injured and recovery take place, I append a short description of a few coming under our especial notice.

1. *Officer 21st. M.I.* Gunshot wound of left thorax ; point of entrance about middle of left scapula, below spine ; point of exit, junction of second costal cartilage with sternum. Wounds cleansed and sealed with collodion and iodoform; uninterrupted recovery with no special disturbance beyond slight cough and dyspnœa. Eleven days after injury was transfered to Johannesburg.

2. *Private of 20th. M.I.* Gunshot wound received March 24th, at Reitfontein ; point of entrance, external surface of lower part of upper third of left thigh ; exit at ascending ramus of left pubic bone ; ball then grazed scrotum and penis ; entered right thigh below middle third of Poupart's ligament and came out in front of great trochanter, grazing the femoral artery and causing a fusiform aneurism. Patient also shot through right arm, with injury to median nerve, causing pain and numbness to forearm, and leaving a hard indurated mass along the course of the nerve. Transferred to 32 Stn. Hospital on 12th day.

3. *Lieut. 21st. M.I.* Gunshot wound of thigh, abdomen and chest ; points of entrance junction of lower and middle third of left thigh, outer side ; exit centre of upper third, just to outer side of femoral artery. Second entrance just below the ribs on the left side, at inner angle of left hypochondriac region; second exit between scapula and spinal column, at third dorsal vertebra ; wounds entirely healed, and patient sitting up twelve days after injury.

4. *Private of Camerons.* Gunshot wound of head, entrance through right malar bone ; point of exit, mastoid process on same side. Wound washed and dressed, patient in a few days going about the camp, doing remarkably well.

5. *Private I.Y.* Shot through the middle of upper lip, ball coming out in back of neck, little to left of middle line, and almost directly opposite to point of entrance ; also shot through right shoulder ; no serious inconvenience from either wound. When first dressed, patient, a young lad, exhibited great pleasure when told he was shot through the moustache, saying he was never credited before with having one.

6. *Boer prisoner.* Shot through the head just about zygoma on one side ; ball coming out directly opposite, wounds healed readily ; good recovery.

7. *Boer prisoner.* Fracture of the skull with injury to brain ; ball passed diagonally along upper surface of left hemisphere to right ; gutter fracture four and a half inches long, and one inch wide ; paralysis of limbs on opposite side ; marked ecchymosis of face, but no facial paralysis, slight ptosis of right eyelid, and slight interference with speech. Extensive injury to brain substance caused

by depressed pieces of bone. With careful removal of these and protruding brain substance, irrigation and light packing; ptosis disappeared and speech improved ; and at present, twelve days after injury, patient is doing well, eating well, and conversing with his fellow prisoners.

8. *Private 22nd. M.I.* Wounded March 22nd, at Reitlei ; gunshot wound of abdomen; ball entered left side, two inches above and anterior to great trochanter, emerging just above the crest of ilium on opposite side, direction being obliquely upward from entrance to exit. Patient lay on ground seven hours and then walked two and one half miles to Boer farm-house; wound not dressed for 32 hours. Good recovery.

9. *Field Cornet.* Gunshot wound of left leg, compound fracture, also shot through liver and abdomen ; entrance on right side about middle of liver dullness ; exit in line and to left of spinal column, patient doing well ; abdominal wounds healed ; slight pain and tenderness over liver ; leg improving ; no shortening.

10. *Boer prisoner.* Shot through the head ; point of entrance to left of occipital protuberance ; exit through left mastoid process ; ball then taking off top of ear. Scalp opened along course of ball ; very septic ; all pieces of bone removed and also protruding brain-matter ; wound irrigated and lightly packed with iodoform gauze ; and top of ear stitched on ; patient did well ; improved for several days, getting up to stool, etc., but died rather suddenly probably from thrombosis in lateral sinus.

11. *Private 21st. M.I.* Gunshot wound ; point of entrance one inch above and one inch to inner side of anterior superior spine of left ilium. Exit through junction of lumbar vertebræ with sacrum. Retention of urine for 4 days ; requiring catheterization. Pain in left leg. No paralysis, patient convalescent.

12. *Boer prisoner,* khaki clad, with Yeomanry hat ; gunshot wound of thorax ; point of entrance to right of middle sternum ; ball, (shrapnel bullet), excised from skin a little posterior to mid-axillary line. Probing showed ball entered thorax, but patient made a good recovery with no serious symptoms.

13. *Boer.* Gunshot wound of left lung, very septic; wounds alive with maggots. Point of entrance posterior to mid-axillary line at lower angle of scapula ; exit one inch below, and one inch to left of nipple. Exit wound very large, through which a large open gangrenous wound in lung can be seen, and through which a tube can be passed to back of thorax. Great difficulty in breathing. Posterior wound having closed at once, was reopened ; the cavity irrigated with boracic solution ; drained from posterior wound, and opening in lung lightly

packed with sterilized gauze. Cavity did not drain satisfactorily through posterior opening so patient had to be rolled on his side occasionally to allow anterior drainage. At present, 12 days after receipt of injury, patient is improving and likely to recover.

In addition to these cases we received by same convoy at least nine septic compound fractures ; five of femur, and four of tibia. Indeed most of the wounds are in a septic condition when they reach the hospital ; and in the case of compound fractures, owing to the necessarily limited supply of long splints, and the shortness of time devoted to first dressings, these generally have side or co-oaptation splints applied over the entrance and exit wounds, blocking the discharge ; but when opened drained and packed (after removal of spiculæ), they do well.

In the case of the wounded Boer prisoners, many of whom are found at farm-houses, and brought in, the stench from the wounds was horrible, in fact it soon permeated the whole camp, and necessitated a cigarette while operating, a copious use of deodorants, followed by a little liquid refreshment. Brother Boer bears his sufferings manfully and seldom complains. As an instance of what he can go through I may instance a case that occurred after Grenfell's fight on the 11th inst. A Boer with both testicles shattered galloped seven miles and then put up a fight before captured.

Contrasting the nature of their wounds, with those of our men it would, on the whole, show the superior marksmanship of the latter, though this may be accounted for by the fact that the Boers at this stage of the game frequently gallop up to within close range, firing from their horses as they advance ; while our men dismount and lie down. As an explanation of the non-severance of large vessels and nerves by bullets crossing their course, the idea would suggest itself that their escape is due to their elasticity, and a certain amount of laxity (especially in the abdominal and thoracic cavities), which allows of their being pushed aside, unless struck in the mid-axis of their structure ; and to the high velocity of the projectile.

The operating and dressing incident to the arrival in hospital of about 70 cases of septic gunshot wounds is sufficient, even with a good dust storm in progress, to keep a man from standing around and catching cold; and taxes our sterilizing apparatus to the utmost.

The left section, with Gen. Walter Kitchener's column have also been busy with sick and wounded, especially after Cookson's fight (where the Canadians did so well). Here Lieut. Roberts and those under him behaved with the greatest gallantry ; dressing the wounded under a heavy shell fire, which killed several of the horses on their wagons, which were the target of the Boer guns. He is mentioned in "despatches," and will we trust receive some further recognition of his bravery in due course.

If not trespassing too much on your valuable space I hope by the next mail to send you a short description of our equipment, plan of encampment, and its advantages; and the adaptability of our transport wagons for ambulance work.

A. N. Worthington, A.M.S.,
Lt.-Col. Commanding No. X Field Hospital.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. JUNE, 1902. NO. 6.

THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association will meet this year in Montreal, on September 16th, 17th and 18th. This time of the year has been selected by the Local Executive Committee in order that all may avail themselves of the meeting, and it is expected that an unusually large number of members will be present.

To those who contemplate attending the meeting, the following facts will be of interest:—

ARRANGEMENTS FOR TRANSPORTATION:

The following arrangements will be in effect for the Meeting of the Canadian Medical Association at Montreal, September 16th to 18th, 1902 :

In order to take advantage of these arrangements it will be necessary for Members to obtain, from agent at starting point, a Standard Convention Certificate, showing purchase of one-way first class ticket to Montreal, between September 12th and 18th (both days inclusive), which certificate will be honored on or before September 22nd, 1902, in Montreal, by ticket agent of the line on which they arrive, for ticket back to their original starting point when certificate is endorsed by Secretary to the effect that delegate has been in attendance at the Convention, on following basis:—

From Points South and West of Montreal:—

If 300 or more attend, holding Standard Convention Certificates, they will be given tickets for return, free, to original starting point via same route as used to Montreal.

If less than 300 (and more than 50) delegates are in attendance, holding Certificate, they will be given tickets for return to the original starting point, via same route as used to Montreal, at one-third of the one-way first class fare.

From Points West of Fort William:—

[Should special concessions relative to time limit be granted, particulars will be announced later.]

If 50 or more delegates are in attendance, holding Standard Convention Certificates, delegates from Toronto or Kingston travelling to Montreal via Richelieu & Ontario Navigation Co. may return via Grand Trunk or Canadian Pacific Railways on payment of $5.00 to Toronto, or $3.50 to Kingston. Delegates from Toronto or Kingston travelling to Montreal via Grand Trunk or Canadian Pacific, may return via Richelieu & Ontario Navigation Co. on payment of one-half the fare paid on going journey.

From Points East of Montreal:—

If 10 or more delegates are in attendance, holding Standard Convention Certificates, delegates east of Montreal will be given tickets free, for return.

Any further particulars may be obtained from the General Secretary, Dr. Geo. Elliott, 129 John St., Toronto, or from the Chairman of the Transportation Committee, Dr. J. Alex. Hutchison, 70 Mackay St., Montreal.

Local Arrangements:—The Meetings will be held in the various rooms of the Medical Faculty of McGill University.

Programme:—There will this year be two Sections of the Association, one mainly Medical, the other mainly Surgical. The address in Medicine will be given by Dr. Wm. Osler, of Johns Hopkins University, Baltimore; that in Surgery by Dr. John Stewart, of Halifax.

In addition to this, on two days of the meeting, clinics will be held in the Hospitals at such times as will not interfere with the general programme of the Meeting, and will yet enable all those who care so to do to see or to exhibit living cases or specimens which may be of interest to the Members.

Pathological Museum:—The Museum this year will be one of the features of the Meeting, and circulars have been issued by the Secretary of the Museum Committee, Dr. M. E. Abbott, announcing the intentions of the Committee. Any contributions in the way of specimens will be gratefully received by the Secretary, and every care will be taken of specimens lent, and, as soon as the meeting is over, they will be repacked and reshipped to the owners by a responsible person. Specimens for the exhibition should arrive not later than September 6th. The Committee is desirous more particularly of obtaining series of specimens illustrating diseased conditions of the Liver, Gall Bladder and Pancreas. To all those who may not have received circulars containing details of the Pathological Exhibit, the same may be had on application to Dr. M. E. Abbott, McGill Medical College, Montreal.

The Museum of Commercial Exhibits, which is under the special charge of Dr. J. W. Stirling, 255 Mountain Street, Montreal, will be found in the most suitable part of the Medical Buildings, the space allotted therefor occupying the main hall of the building. Many applications have been received from various manufacturers and instrument dealers so that a large and interesting exhibit is expected.

LOCAL COMMITTEES:

The Local Committees are as follows:—

Executive Committee:—President, Dr. F. J. Shepherd; Vice-President, Dr. J. Alex. Hutchison; Local Secretary, Dr. C. F. Martin; Local Treasurer, Dr. J. G. McCarthy; Council: Drs. James Stewart, F. G. Finley and J. M. Elder.

Reception Committee:—Sir Wm. Hingston, M.D., Chairman; Dr. E. P. Lachapelle, Dr. F. W. Campbell, Dr. Robt. Craik, Dr. T. G. Roddick, Dr. D. C. MacCallum, Dr. R. F. Ruttan, Hon. Jos. Guerin, M.D., Dr. James Perrigo, Dr. J. P. Rottot, Dr. A. R. Marsolais, Dr. James Stewart, Dr. T. J. W. Burgess, Dr. A. Brodeur, Dr. J. E. Dubé,

Entertainment Committee:—Dr. H. S. Birkett, Chairman; Dr. James Bell, Dr. C. W. Wilson, Dr. K. Cameron, Dr. J. W. Stirling, Dr. W. G. Stewart, Dr. J. A. LeSage, Dr. W. H. Drummond, Dr. H. B. Yates, Dr. W. W. Chipman, Dr. A. Lapthorn Smith, Dr. L. deL. Harwood.

Programme Committee:—Dr. J. G. Adami, Chairman ; Dr. F. G. Finley, Dr. A. DeMartigny, Dr. C. N. Valin, Dr. J. M. Elder, Dr. A. T. Bazin, Dr. J. E. Dubé.

Transportation Committee:—Dr. J. Alex. Hutchison, Chairman; Dr. G. E. Armstrong.

Finance Committee:—Dr. H. L. Reddy, Chairman; Dr. Jas. Perrigo, Dr. W. A. Molson, Dr. D. J. Evans, Dr. F. R. England, Dr. S. Boucher, Dr. J. G. McCarthy Dr. Wm. Gardner, Dr. W. F. Hamilton, Dr. L. J. V. Cleroux, Dr. G. Gordon Campbell.

Pathological Museum Committee:—Dr. Andrew Macphail, Chairman; Dr. Maude E. Abbott, Secretary; Dr. A. J. Nicholls, Dr. Wesley Mills, Dr. J. B. McConnell, Dr. A. Mercier, Dr. J. A. Springle, Dr. E. P. Benoit, Dr. A. Bernier, Dr. Rene Hebert, Dr. A. D. Blackader.

Exhibition Committee:—Dr. J. W. Stirling, Chairman; Dr. Ridley McKenzie, Dr. C. A. Peters, Dr. A. W. Haldimand.

PAPERS.

Some of the papers already promised are as follows:—

Dr. W. Corlett, Cleveland—Lantern Demonstrations on Exanthemata.
Dr. J. O. Orr—Artificial Astigmatism.
Dr. C. A. Wood, Chicago—Empyema of Frontal Sinus.
Dr. P. G. Goldsmith, Belleville—Management of Cases of Nasal Obstruction.
Dr. J. F. MacDonald, Hopewell, N.S.—Tuberculosis.
Dr. A. R. Robinson, New York—X-ray in Cancer.
Dr. D. A. Shirres, Montreal—Degeneration of Spinal Cord Associated with Anæmia and other forms of Mal-nutrition.
Dr. James Stewart, Montreal—On Some Points in Cerebral Localization. Illustrated by a series of morbid specimens and some living cases.
Dr. A. Primrose, Toronto—Case of Filariasis in Man, Cured by Operation.
Dr. J. R. Clouston, Huntingdon—The Country Practitioner of To-day.
Dr. A. H. Ferguson, Chicago—The Pathologic Prostate and its Removal through the Perinæum.
Dr. A. E. Orr, Montreal—Clinical Observations on Blood Pressure in Diseased Conditions.
Dr. H. D. Hamilton, Montreal—Complete Occlusion of the Posterior Nares.
Dr. Maude Abbott, Montreal—On Methods of Museum Classification or Arrangement.

Papers have also been promised by Drs. Armstrong, Ingersoll Olmstead, D. C. Meyers, G. S. Ryerson, F. A. L. Lockhart, L. Smith, G. A. Peters, P. Coote, J. W. Stirling, F. Monod Rudolf and many other.

HYOSCINE IN ETHER ADMINISTRATION.

We have to record in a paper presented before the Montreal Medico-Chirurgical Society by Dr. E. A. Robertson, published this month, a means of preventing the untoward after effects of ether anæsthesia. So many drugs have been vaunted as of use in this respect, and the advantages gained by their administration have been so often offset by their disadvantages and their uncertainty of action, that anæsthetists have almost entirely discarded them. We do not, however, ever remember to have seen the hydrobromate of hyoscine recommended for this purpose, and, judging from the results obtained by the author of the paper in his short series of experiments, it is worthy of an extended trial. As Dr. Robertson states in his paper, his cases have as yet been too few to reach any conclusive opinion, and it may, furthermore, be said that the class of patients on which his observations were made, is least likely to present any untoward effects from the action of the drug itself, the majority of gynæcological operations being performed upon patients who are not suffering from acute affections requiring immediate surgical interference. Whether it will be found as safe and sure in its action in cases where shock following accident, pain or high temperature complicate matters, can only be determined by experiment.

Were, however, hyoscine only found of value in the class on which these first observations of its action have been made, it will prove a great boon both to the anæsthetist and the anæsthetized, as undoubtedly the dread of operation to many lies solely in the fear of experiencing the distressing effects produced by the anæsthetic.

MEDICAL LIBRARY.

Quarterly Report Feb. 1st to Apl. 30th, 1902.

Adami, J. G., M.D.
    Medical Chronicle, 1901.
Admiralty, London.
    Statistical Report of Health of Navy, 1900.
American Gynæcological Society, Vol. 26.
American Ophthalmological Society, Trans., 1901.
American Orthopedic Society, Vol. 14.
Berlin Board of Health Report, 1900.
Birkett, H. S., M.D.
    Diseases of the Throat, Nose and Ear, McBride.
    Diseases of the Nose and Throat, Kyle.
    Diseases of the Nose and Throat, Coakley.
Blackader, A. D., M.D.
    Therapeutic Gazette, Vol. 15, 16.
Brooklyn Engineers' Club, Tr., 1901.
Brooklyn Medical Journal, Editors, Vol. 15, 1901.
Bruxelles University Library, 4 v.
Buffalo Medical Journal, Editors, Vol. 40, 1901.
Byers, W. G. M., M.D.
    Primary Intradural Tumors of the Optic Nerve, 1901.
Cameron, J. C., M.D.
    Centralblatt f. Gynakologie, Vols. 13, 14, 15, 16, 17, 18.
    Annales de la Société Obstetricale de France, 1899.

Obstetrical Transactions of London, Vol. xliii.
Medical News, Vol. 79, 1901.

Campbell, G. G., M.D.
International Clinics, 10s. Vol. 4, 1901.

Chicago Medical Recorder, Editors, Vol. 21, 1901.
Colorado State Board of Health, Reports, 1894-1900.
Dietetic and Hygienic Gazette, Editors, Vol. 17, 1901.
Edinburgh City Health Reports, 3 Vols., 1899-1901.
Ergebnisse der allgemmen Pathologie, &c., 3 Vols., 1901.

Evans, D. J., M.D.
American Journal of Obstetrics, 1901.

Finley, F. G., M.D.
Treatise on Practical Anatomy, Boeming, 1901.
International Medical Magazine, Vol. 9, 1900.

Fitzgerald, Guy, H., M.D.
Symposium of Appendicitis.

Florida State Board of Health, 1901 and 1902.
Glasgow City Health Reports, 3.
Glasgow Hospital Report, 1899-1900.
Guy's Hospital Report, Vol. LVI.

Horrocks, W. H., M.B., B.Sc.
Introduction to the Bacteriological Examination of Water.

Indian Government.
Annual Report Sanitary Commissioner, 1900.

Indiana State Board of Health, 5 Reports.
Iowa State Board of Health, 1901.

Johnston, Wyatt, M.D.
Archives d'Anthrapologie Criminelle, 2 Vols.
Medical Legal Journal, Vol. 12, 14.

Journal of Psycho-Asthenics, Editors.

Lafleur, H. A., M.D.
Asiatic Cholera by Wendt, 1885.

Luzerne County Medical Society, Vol. IX, 1901.
McGill Annual, Editors, 1902.
Canadian Journal of Medicine and Surgery, Editors, Vols. 9 and 10, 190
Maine State Board of Health, 5 Reports.
Massachusetts Department of Agriculture, Report, 1900.

Medical Librarians' Association.
Maryland Medical Journal, 23 vols.

Medical Review, Vol. 3, 1900, Editors.

Mercke, E.
Annual Report, 1900.

Michigan University.
Dental Journal, 4 vols.

Middlesex Hospital Reports, 1900.

Monod, Fernand, M.D.
Traitement Chirurgical du Pied Bot Varus Equin Congenital chez l'Enfant.

Montreal City Health Dept., 4 Reports.
National Academy of Sciences, 7 vols.
New Hampshire State Board of Health, Report, 1899-1900.
New York State University.
  Regents' Report, 1898-1899.
  Library Report, 1900.
Ohio State Medical Society, Trans., 1901.
Ontario Board of Health, 9 Reports.
Ophthalmic Record, Editors, Vol. 10, 1901.
Pathological Society of London, Vol. 52, 1901-02.
Pennsylvania State Board of Health, Vols. 1-2, 1900.
Post-Graduate Teaching Staff, 1896-99.
  Archives de Neurologie, Vols. 10, 11.
Punjab Government.
  Report of Vaccination, 1900-01.
Quebec Board of Health, 2 Reports.
Quebec Provincial Agricultural Dept., Rept., 1900.
Rome Public Health, 6 Reports.
Royal College of Physicians, London.
  List of Fellows, 1902.
Royal Infirmary of Edinburgh, Report.
Royal Infirmary of Liverpool, Report.
San Francisco Public Health, 8 Reports.
Sheffield Health Report, 1901.
Society for Study of Diseases of Children, Vol. 1.
Thompson-Yates Laboratory Report, 1900.
Tiffany, F. B., M.D.
  Anomalies and Diseases of the Eye, 1901.
United States Department of Agriculture.
  Annual Report.
  Catalogue of Library.
  Report on Irrigation Statistics, 1900.
  Set of Maps.
  Field Observations on Divisions of Soils, 1900.
Vermont State Agriculture Experiment Station Report, 1900-01.
Whitla, Wm., M.A., M.D.
  Dictionary of Treatment.
Wilkins, Geo., M.D.
  Centralblatt f. Bakteriologie u. Paras, Vols. 1 and 17.
Wilson, S. F., M.D.
  British American Journal, 3 vols.
Yates, M. B., M.D.
  Songs of All Colleges.
  Songs of Western Colleges.

Pamphlets, Calendars, etc.

Amsterdam University. 28.
Bruxelles University Library. 2.
Christian Albrechts University. 5.
DeSchweinitz, G. E., M.D. 4.

Earp, Sam'l. E., M.D. 1.
Fletcher Free Library. 1.
Gay, G. W., M.D. 4.
Geddings, H. D., M.D. 1.
Georgia Experiment Station. 1.
Giessen University. 64.
McEachran, D., M.D.
MacDonald, Carlos F., M.D. 1.
Maryland Agricultural Station. 1.
Morrow, Wm., M.D. 1.
New York Agricultural Experiment Station. 3.
New York State University. 3.
Northwestern University. 2.
Nova Scotia Hospital. 1.
Owens College, Manchester. 1.
Pennsylvania University. 1.
Protestant Hospital for Insane. 1.
Royal Univsrsity of Ireland. 1.
Smithsonian Institution. 5.
Scott, R. J. E., A.M., M.D. 1.
Trudeau, E. L., M.D. 1.
United States Dept. of Agriculture. 34.
Univ. of London, School of Medicine for Women. 1.
Vermont Agricultural Experiment Station. 2.
Wellcome Chemical Research Laboratory. 4.

NEW BOOKS ADDED.

Animal Experimentation—A Series of Statements Indicating its Value to Biological and Medical Science from 1891-2, 1902.
Archives fur Klinische Chirurgie, Vol. 63-64.
Archives fur Pothologische Anatomie u. Klin. Med., Vol. 164.
Centralblatt fur Physiologie, Vol. 14.
Deutsche Zeit. fur Chirurgie, Vol. 59-60.
Fernand von Hemholtz, 1899.
Journal of Physiology, Vol. 26.
McKendrick, Herman Ludwig.
Paget, Memoirs and Letters, 1901.
Revue de Chirurgie, Vol. 23-24.

AMERICAN MEDICO-PSYCHOLOGICAL SOCIETY. At the invitation of Montreal Medico-Chirurgical Society, the meeting of American Alienists was held in Montreal from the 17th to the 20th June.

The Society met at the Windsor Hotel, and the gathering was the largest in its history—over 180 delegates being registered from all parts of the States and Canada.

The members of the Association were received and welcomed by Lieutenant-Governor Jetté, and by Dr. Armstrong, president of the Medico-Chirurgical Society.

During their stay the members of the Society were introduced to the Mayor and Aldermen, who entertained them with a drive and luncheon on Mount Royal. They were also tendered a luncheon by the Medical Faculty of McGill University, and a reception by the Board of Management of the Verdun Asylum.

Perhaps, the most successful entertainment was the smoking concert given by the Medico-Chirurgical Society. The efforts of the various members who took part were heartily appreciated, and the variety and quality of the talent supplied fairly surprised the majority of the local members.

Dr. Mills, Professor of Physiology, McGill University, delivered the annual oration, giving a most interesting and scholarly address on the reflexes, and which we print on another page.

Dr. Burgess, as Chairman of the Committee of Arrangements, is to be congratulated on the pleasant and successful character of the meeting. We sincerely hope to again have the privilege of welcoming this Society at some future date in Montreal.

In his paper on "The Family Physician of the Past, Present and Future," Dr. Knopf pictures the practitioner of twenty-five and fifty years ago, his labours and his trials, also the pleasant incidents of his life as a friend and counsellor of the family in the services in which he was engaged.

In picturing the family physician of the present day, the doctor points out the unjust depreciation of his value, the unfair competition arising from the numerous systems and schools of medicine, the unscrupulous practice of quacks, and the unfair compensation he receives in comparison with the specialist, particularly the great operating surgeons. Specialization, while indispensable to the progress and perfection of our art, has likewise, when carried to excess, as it is now not infrequently, left its imprint on the career of the general practitioner. The life of the family physician of the present is much harder than it was before the advent of specialization. It is suggested that in compliance with all the rules of ethics, the family physician could receive a better remuneration in cases of operations performed by specialists, by taking an active part in at least the after treatment of patients.

Lastly, Dr. Knopf describes his conception of the family physician of the future. His studies in tuberculosis, not only as a medical but also as a social disease, have convinced him that without the aid of the family physician the solution of the tuberculosis problem is an utter impossibility. The family physician is not only in the position to discover pulmonary tuberculosis at the earliest possible day, and thus increase the chances of cure nearly 50 per cent., but it is also the family physician who is best able to inaugurate sanitary and prophylactic measures not only in regard to the prevention of tuberculosis, but also of nearly all other diseases. Dr. Knopf believes that the community which pays enough competent general practitioners to look after the preservation of health of all the indigent families will be the financial gainer in the end, and will improve its sanitary and moral condition beyond expectation. All the well-to-do families will then also learn the value of engaging a general practitioner as a permanent family physician. Through such a system Dr. Knopf believes that the family physician of the future will rise again, not only to the height of the social and professional standing which the physician of the past has occupied, but he will rise still higher in importance and in recognition by the laity as well as by the profession. It is the opinion of the Doctor that the family physician of the future should constitute one of the great factors of civilization and one of the most important helpers in the betterment of the sanitary, social and economic condition of the human race.

Proceedings of the McGill Medical Society of Undergraduates.

MASSAGE.

BY

O. R. PETERS, '02.

The term Massage has been widely stretched from its original meaning—viz., kneading, till it has come to embrace in the eyes of the laity, on the one hand, a system of gymnastic exercises, known as the Swedish System, which has for its object the sound physical development of the body, and on the other, that series of jerking and wrenching movements, which is empirically used by a certain class of men, and which is known as "Bone setting."

This paper will deal with neither of these uses of the word, but will be confined to that series of systematic and scientific movements and manipulations, which are now used by eminent men in the profession as aids in the cure of disease and injury. I wish to take up the subject to-night, under the following heads :—

(1) The history of massage.
(2) The forms and methods of application.
(3) The physiological effects of massage.
(4) The uses of massage in surgery and medicine.

The History of Massage :—

The use of Massage is as old, if not older, than any other form of treatment in injury and disease. The earliest definite information we have on the subject dates back to Hippocrates, the Father of Medicine, who in his writings describes its applications and uses.

"It loosens he says, stiff joints, and gives tone and strength to those which are relaxed," and "it must be applied with soft hands and in all cases delicately."

Hippocrates used the rubbings in the treatment of injuries, etc., after the acute stage had passed, and noting the effects he obtained, he says in his Aphorisms, "Hard rubbing binds, soft rubbing loosens, much rubbing causes to waste, and moderate rubbing causes to increase and grow."

Though his notions regarding the circulation of the blood were incorrect, yet his methods and his teachings were in accordance with our present knowledge of the circulation.

He speaks of the process of massage as "Anatripsis" *i.e,* rubbing up, which as we know aids and does not retard the flow of blood. The knowledge of this fact he probably gained by experience in dealing with effusions, finding doubtless that swellings disappeared most rapidly, when the rubbing was done towards the centre of the body.

Herodotus first proposed gymnastics, combined with massage and rubbing, as a cure for disease, and so successful was he in treating one specially enfeebled old man, that Plato reproaches him for prolonging an existence that could only be a burden to the man himself, as well as to his friends.

Celsus the great Roman physician, who was also an advocate of massage says, "rubbing should sometimes be applied to the whole body as when an invalid requires the whole system replenished."

Lytton in his "Last days of Pompeii" describes the bath which filled such an important place in the daily programme of the Ancients, and so essential was massage to this function, that special slaves were set apart to perform this necessary complement to the daily toilet. The slave who could rub and anoint skilfully soon rose in favor in his master's eyes.

Massage too in the olden days as at the present time played an important part in the training at the Gladiatorial Schools. Before the great games and fights, the combatants were stroked, patted and rubbed, to make the muscles supple and elastic, and after the strain of the contest the victor was rubbed and kneaded to ease the pain and soften the cramped and tired muscles.

Through the Dark Ages, massage must have fallen into disrepute, for very little is heard of the use or great healing powers of rubbing.

Coming down to later times, Ling of Sweden early in the nineteenth century revived the treatment, and in his "Swedish Movement Cure" placed the system on a scientific basis.

A few years later, Dr. Balfour of Edinburgh took up the subject, and in his book entitled "Illustrations of the power of Compression and Percussion in the cure of Rheumatism, Gout, etc.," speaks very highly of the benefits derived from massaging the trunk and limbs especially in cases of gout and rheumatism.

The Forms and Methods of Application of Massage : —

Two forms of massage are spoken of and practised, and both forms have their ardent supporters—I refer to the Mechanical and the Manual. As the mechanical is the shorter, I will deal with it first.

The late G. H. Taylor of New York held that the effects of massage depend as much on the order, rate and quality, as upon the quantity of the motions used. To be of service he said,—massage should have the following characteristics :—

(1) It should transmit vibrations at variable but known rates to any part of the trunk or limbs.

(2) It should impart this action in diversified forms.

(3) It should be capable of confining its action to distinct classes of tissues, *i.e.*, muscles, nerve trunks, nerve centres and separate organs.

These qualities he held, could not be obtained to the required extent by the hands of the operator. He therefore devised a series of machines by which, the rate of motion and the degree of pressure in the friction, percussion and kneading movements could be accurately measured.

Taylor believed that different and definite rates of vibration should be employed for different effects required. Thus the rate of applying percussion, *e.g.*, to stimulate peristalsis, to the abdominal wall should be at least one thousand beats per minute, which rate of course, could not well be reached by the hand even of the most practised operator.

His machine for applying this percussion, was a series of small knobs attached to a revolving wheel, which could be made to impinge with a very light tap, at any required rate, on any part of the body the operator wished. Thus it could be applied to the head, trunk or limbs, or to any special muscle or nerve that required stimulation. The limbs were kneaded between two revolving discs, the rate and pressure of which can be altered at will, and which had the advantage that they could be operated by the patient himself.

Abdominal massage and kneading was done in a somewhat similar way. The patient lay face downward on a table, which had a hole in the centre. A series of knobs attached to levers and revolving wheel protruded through this opening, and with the revolution of the wheel the knobs administered a slow gliding and kneading movement to the abdomen.

The rate of abdominal massage should be about twenty-five strokes per minute, though both the rate and the degree of pressure could be changed at will.

The chief advantages claimed by this system are:—

(1) The rate and quality of massage can be accurately gauged.

(2) The saving in time and energy on the part of the operator.

(3) The patient can after a few lessons learn to work the appliances himself.

Dowse, speaking of massage says, that it should be conducted by the hand and by the hand alone. He defines massage as "The application of sentient living matter to sentient living matter in divers ways, and with an amount of energy in direct ratio with the resistance which has to be overcome. This definition is not compatible with any form of mechanical appliance that can be invented to perform the work, nor does it seem feasible that any instrument can be made which will have such delicacy of touch or such great adaptability as the human hand. Dowse divides the manipulations employed by the masseur into four classes :—Effleurage, petrissage, tapotement and friction.

Effleurage :—Under this class are those movements, light and stroking in character, which are especially applicable to the head. They affect chiefly the most superficial tissues—the epidermis, and the peripheral ends of the nerves. The results are soothing hypnotic and sleep-producing.

The most severe headache can often be made to disappear as if by magic, by light and gentle movements of this kind.

The whole beauty and perfection of effleurage consists in its very lightness, and the success of a masseuse may lie chiefly in the delicacy of her sense of touch. The stroking in effleurage is sometimes slow, sometimes rapid, every movement taking the direction of the superficial nerves. It has its calming effect not only on the peripheral nerves, but also by induction on the cortex of the brain, and on the vasomotor centres in the bulb. It is especially applicable in cases of emotional excitement and hysteria.

Petrissage :—This includes the pinching, squeezing and kneading movements, by which the deeper structures are brought under the influence of the operator's hand. The fundamental principle of this group of movements is pressure, by which the deep-seated tissues are massed together. This pressure must not be too hard, or the vitality of the tissues will be damaged. It should be rolling in character, diffuse rather than direct.

There are four primary and principal forms of giving petrissage manipulations :—

(1) With the end of the thumb and the tips of the fingers.

(2) With the whole thumb, the entire fingers and the forepart of the palm of the hand.

(3) With the entire hand.

(4) Vibratory petrissage, the tips of the fingers and thumb being used in a vibratory manner.

In carrying out this form of massage the hand should never be entirely removed from the surface of the body, and it is essential to the success of petrissage that the pressure of the kneading hand should be equalized.

The tissues chiefly affected by petrissage are :—The skin, fat, muscles, areolar tissue, trunks and ends of nerves, arteries, veins and lymphatics, and most important of all, the smallest capillary vessels, where the chief bulk of the tissue respiration is performed. Special care must be taken in this form not to cause the patient unnecessary pain or discomfort. This form is used where we wish to preserve the nutrition of the tissues, *e.g.*, to prevent atrophy of the muscles, after fracture or paralysis.

Tapotement :—By this term is meant the tapping, vibratory, percussive and concussive movements, which are particularly applicable to the back, chest, abdomen and trunk generally.

The mechanical effect of tapotement is chiefly to cause vibrations.

This effect is brought about by a series of rapid tappings to the part in which the effect is desired.

The hand is held in four positions in this method :—

(1) The hand is partially closed, the first two fingers resting on the ball of the thumb.

(2) All the fingers are brought together, forming a saucer-like cavity, the effect being partially due to the momentary compression of the air in the palm, when brought in contact with the surface of the body.

(3) The flagellating hand, in which only the tips of the fingers strike the surface, the movement being a series of light rapid strokes, from the wrist alone.

(4) The backing hand, in which the ulnar surface of the hand is made to strike the surface with light rapid strokes. The effect of tapotement is chiefly on the circulatory apparatus, and it varies with the degree of force used in tapping. Light tapping of the surface causes contraction of the blood vessels of the part, while a more powerful stroke rapidly produces dilatation.

Friction is closely related to effleurage and petrissage, its methods of application and its effects may be considered as a combination of the two forms.

The Physiological Effects of Massage :—

Kellog takes up the physiological effects of massage under three heads :—Mechanical, reflex and metabolic.

(1) *Mechanical* :—Where the tissues are altogether passive, the effects resulting from the mechanical action of the operator's hand, *e.g.*, the relieving of stasis in the veins and lymph vessels by simple rubbing and the replacing of prolapsed viscera by manipulations.

(2) *Reflex* :—Where the peripheral manipulations cause stimulation of the nerve centres, which stimuli are transmitted to related centres in the brain. These cerebral centres in turn send out impulses by which vital changes are established in parts of the body, related to those primarily acted upon.

(3) *Metabolic* :—Where important changes take place in the tissue activities, both of the parts directly acted upon, and of the body in general, as the result of the mechanical effects, and of reflex activities set up.

The effects on the nervous system depend chiefly on the kind of massage used, and how it is applied. For example, direct stimulation of the nerve trunks may be obtained by friction, light percussion and slapping ; while the nerve centres are best excited by beating and vigorous backing, especially if applied to the region of the spine.

The sedative effect on the nervous system, on the other hand, may be obtained reflexly by light and gentle stroking, or by prolonged vigorous percussion, which tires out the nerve and finally blunts its sensibility.

Reflex effects are seen in all forms of massage, the most striking results being produced by very light stroking when applied to certain reflex areas. They are, a visible contraction of certain muscle fibres, and a powerful stimulation to the centres in the spinal cord. The part of the cord thus stimulated depends, of course, on the reflex area acted upon—for instance, friction over the epigastric region, stimulates the centres in the cord, from the fifth to the seventh dorsal segment, friction over the cremasteric, stimulates the first to third lumbar segment, while that over the plantar area stimulates the last two sacral segments. The effect on the muscular system is chiefly in increasing the amount of blood flowing through the muscles massaged.

Lander Brunton, from his experiments on animals, draws the following conclusions :—

(1) During massage of muscles, the flow of blood through them is increased.

(2) Immediately after the cessation of rubbing there is an accumulation of blood in the muscles which is rapidly followed by an increased flow of blood through the muscles, an increase from two and four times as great as the normal flow.

The effect of this increased flow of blood, is an increased amount of nutrition brought to the part, a greater amount of respiration in the tissues, and a quicker elimination and removal of the noxious products of metabolism. The muscle becomes larger, firmer, and its tonicity is improved. The circulation is also greatly influenced both locally and generally, by massage, the effects differing as in other tissues, with the modes of application and the parts massaged.

General massage of the body, like exercise, increases the rate and force of the heart beat, but differs from exercise in that it does not cause a general rise in the blood pressure. This is due to the fact that the manipulations cause a dilatation of the smaller vessels, and hence a lessening of the peripheral resistance. The local effect of massage is to produce an active hyperæmia of the part, due to dilatation of the vessels and the increased flow of blood through them. The activity of the vessel walls is increased and the blood is returned more vigorously to the heart. The mechanical pressure, acting chiefly on the veins and lymphatics, also aid in the return flow of blood.

Local massage, by causing hyperæmia of the part, withdraws for a time, a certain quantity of blood from the general circulation. Thus, massage of the extremities is employed to relieve portal and pulmonary congestion.

Abdominal massage is especially useful in thus sidetracking the blood : the extractive vessels dilate widely and a considerable quantity of blood is withdrawn from the general circulation. This is a valuable means of relieving cerebral congestion. Another effect obtained is the slowing of the pulse, partly from the decrease in the quantity of the circulating blood, causing a slower filling of the heart, and partly from reflex stimulation of the inhibitory cardiac centres.

The action on the lymph vessels is also important, as by increasing the flow of lymph, resorption of effusions, and the subsidence of swellings are greatly favored.

The uses of Massage in Surgery :—

The chief interest of massage in surgery centres about the treatment of fractures, sprains and dislocations, and much has been said and written for and against its use, instead of the method of perfect immobilization.

Geo. Woolsey, writing in the *Phila. Med. Journal,* 1900, on the treatment of fractures, says : —

" The treatment of fractures, especially near joints, by immobilization is not entirely satisfactory. It imperfectly restores the form of the part, does not favor the repair of the bone, or the restoration of function, but often causes the formation of a scanty callus, delayed or non-union, stiffness of joints, atrophy of muscles and disturbances in circulation."

He advocates in cases of fracture, especially those near or in the joint, that massage be employed daily from the first, each séance lasting about twenty minutes. The fractured limb is put in splints during the interval between massage, to give the patient a sense of security and to prevent displacement of the fragments. The slight amount of movement between the ends of the bone does no harm, but rather favors the formation of a good callus. By this method Bennett claims that he gets firm bony union in from one-third to one-half the time required in the ordinary method of immobilization.

Carl Beck of St. Mary's Hospital, speaks of massage as "A splendid adjunct in the after treatment of fractures." If there is no tendency to displacement, as in the extra articular fractures of the lower end of the radius, massage may be commenced as early as the third or fourth day after the injury. "But," he adds, "to substitute massage entirely for good old immobilization treatment, as has been advocated, is not advisable."

Scudder of the Massachusets General Hospital says :—

"Massage and passive motion should be employed as soon as union is firm, and the anterior and internal angular splints have been removed. It can be given at first without removing the limb from the splint. Convalescence will proceed more rapidly and the function of the limb be restored more quickly in consequence of massage.

Frederick Cotton, in the *Annals of Surgery*, 1902, lays special stress on the value of massage in the treatment of fractures in or about the elbow in children. The liability to permanent stiffness and deformity is greatly lessened by its use.

In the treatment of recent fractures by massage the chief objects are :—

(1) To relieve the spasm of the muscles.

(2) To promote the absorption of effusions.

(3) To promote the more rapid formation of a callus.

(4) To maintain the circulation and the nutrition of the part.

(5) To prevent the formation of adhesions in tendon sheaths and joints.

(6) To prevent the atrophy from disuse of the muscles of the limb.

(7) To keep the nerves from becoming implicated in adhesions and new formed callus.

The methods employed with these objects in view are :—

(1) Gentle rubbing in an upward direction over the fracture and limb above and below the fracture. This soothes the pain, relieves the spasm of the muscles and promotes absorption of the effusions.

(2) Passive motion of the joints above and below the fracture to prevent stiffness and adhesions in the joints and tendon sheaths.

(3) Systematic massage, especially in form of petrissage, of the muscles of the fractured limb, which increases their blood supply, hence their nutrition, and prevents atrophy.

Bennett, in speaking against the principle of prolonged fixation of a joint after dislocation, which has as its object the sound union of the capsule of the joint, says : "In dislocations we should ignore the torn capsule completely, as far as regarding it as an excuse for perfect immobilization. The capsule will unite more soundly under manipulations and massage, than in any other form of treatment, while there will be less liability for adhesions to form in and around the joint. The real cause of secondary dislocation is looseness of the capsule which follows from the muscular atrophy, always seen in prolonged fixation of a joint."

Bennett therefore advocates in dislocations, especially of the shoulder joint, that massage should be commenced immediately after the reduction of the displacement, and after a few days passive motion begins. By this treatment he claims that dislocations of the major joints may be cured in from two to three weeks, without adhesions, stiffness or muscular wasting, and with a lessened liability to secondary dislocations.

In treating sprains by massage, the first indication is to reduce the swelling, by promoting the absorption of the effusion. Here the patient is put to bed, and a light splint applied to the limb, leaving free access to the joint. Gentle massage should be commenced at once, and should be applied at first above the injured joint, in a central direction, to empty the vessels and hasten absorption. This rubbing should be continued for about twenty minutes, and should be done twice a day, the joint in the interval being covered with a lead and opium fomentation. When the swelling begins to subside, massage of the joint and gentle flexion and extension are employed, and at the same time the thigh and leg should be well rubbed to prevent stiffness and the formation of adhesions. Treated in this way, severe sprains can generally get about comfortably in from ten to fourteen days. Where however the joint is extremely inflamed and painful, we must wait till the inflammation has subsided before beginning this treatment.

In acute or chronic synovitis, rest for the part is necessary as long as heat and pain are present, when these subside, massage and passive motions should take the place of the prolonged fixation, and should be used daily, unless there be a return of the heat and pain.

T. B. Wilson, in the *Australian Medical Gazette*, cites an interesting case illustrating another use of massage. The case was one of chronic ulceration of the leg following an injury. Skin grafting by Theirsch's method was first tried, the graft took well, and the ulcer healed, but after a couple of months, the tissues broke down again in the same place. Wilson then determined to try the effects of massage, with the idea of improving the circulation and the state of the tissues of the part, before trying to skin graft again. Gentle friction and kneading were employed, at first above the ulcer, later in the region of the ulcer itself. The results obtained were very good, the circulation in the parts was much improved ; there was a gradual absorption of the hard indurated edges of the ulcer, and the wound finally closed completely, with no other treatment than simple rubbing of the tissues. There was no recurrence of the ulceration.

The uses of massage in medicine are so numerous that only a few of them can be touched upon. It has been successfully used in various forms of nervous disorders, *e.g.*, hysteria, unilateral chorea, neuralgia, etc. Special attention has been drawn to the good results obtained by the sedative effects of cerebral, and the bracing effects of spinal massage.

In progressive muscular atrophy, especially of the spastic type, Osler claims that systematic massage is the best form of treatment. In infantile paralysis, rubbing is of the greatest value as it maintains the nutrition of the muscles, so that in the gradual improvement which takes place in parts of the affected segments of the cord, the motor impulses, on returning, may have the response of well nourished, not atrophied, muscle fibres. Osler says this form of treatment is worth all other measures devised for the disease and should be persisted in for months if necessary.

Chronic constipation offers a wide field for the masseuse, and many cases are reported, showing excellent results from systematic massage. Many methods have been suggested for applying friction in these cases, and each masseuse probably thinks her way is the best. Kimmerling tells us of a method by which he gets very good results.

The patient lies on the right side on a bed or table, the position being made as comfortable as possible. The skin and subcutaneous fat at the level of the left iliac crest are pinched up between the thumb and index fingers of each hand. This makes the descending colon more accessible to the tips of the remaining fingers. Rubbing and pressure movements are made with the tips of these fingers on the colon, working in a downward direction ; this should be continued for about five minutes. The patient is then turned on the left side and the same process applied to the ascending colon, the direction this time, being from below upward. For the treatment of the transverse colon, and small intestines, the patient is put in the genu-pectoral position, which relaxes the abdominal walls, and drops the intestines forward into the operator's hand. Kneading and rubbing movements are made over the trasverse colon from right to left, and general kneading over the lower part of the abdomen to affect the small intestine.

The whole operation should last about fifteen minutes ; it is followed in a short time by an easy and abundant evacuation. Dowse says that to these kneading and pressure movements, should be added percussion of the abdominal walls to stimulate peristalsis. He also advocates vigorous percussion slapping and backing of the back, spine and buttocks to stimulate the centres in the cord.

Where the bowel is occluded by cancerous or other growths, massage is of course useless, but where the cause of constipation is scybala, defective blood or bile supply, or defective innervation, massage is a valuable remedy. Dowse recommends great care in the treatment by massage of obstruction, where intussusception is suspected, as very disastrous results may follow rough or unskilled handling of such cases. If there be necrosis or gangrene of the intussuscepted part, as sometimes happens, handling may cause rupture of the diseased walls, and a general peritonitis be set up.

One of our clinical teachers looks with disfavor on the use of massage in phlebitis, for he says, by manipulations we may dislodge a portion of the thrombus into the general circulation, which will speedily relieve the patient of the necessity of further treatment, though perhaps not altogether in a manner creditable to ourselves.

Abdominal massage is indicated in neurasthenia and neurosis of the stomach. It increases the tonicity of the abdominal walls, stomach and intestines, and promotes the glandular functions. Under its influence the secretion of hydrochloric acid and the total acidity of the stomach contents is increased. It is also of value in chronic gastritis, atony of the stomach, with or without dilatation, and in dilatation of the intestines.

It is contra-indicated in all conditions of ulceration of the stomach or intestines, in all forms of cancer, in acute inflammations, in hyperacidity, and excess of hydrochloric acid, in prolapsed and sensitive kidney, and in aneurism of the abdominal or thoracic aorta.

If time would permit I would touch on the uses of massage in diseases of the eye, ear and throat, in gynæcology, and in genito-urinary troubles, but I think I have said enough to-night to show what an important subject massage is, and how it may help us in our treatment of a variety of cases.

PAIN AND ITS SIGNIFICANCE IN DIAGNOSIS.

BY

J. A. E. CAMPBELL, B.A., '02.

Pain, according to the dictionary, is defined as an uneasy bodily sensation varying in degree from slight uneasiness to extreme torture. This definition fulfils the scientific conception of the term, and allows its application to any sensation which is disagreeable, or, at least, arouses in us a desire to escape from it. Any of the symptoms indicative of disordered conditions in our viscera, such, for example, as dyspnœa and nausea or vomiting, in themselves alarming and the cause of actual bodily discomfort, might be included in a broad sense under Pain; but in considering the derivation of the word, it is seen that punishment is the main idea, which originally consisted in arousing in some one an acute bodily sensation; so when we talk of pain we usually regard it as a quality of sensation which we express by the phrase "It hurts."

Within the limits of this paper, I hope to regard it as a nerve sensation, which calls our attention to some region of the body more or less definitely, and compels in us a desire to rid ourselves of it, and to see what information it can afford us in abnormal states of the human organism.

In order to investigate such a disturbance in a purely scientific manner, an exact knowledge as to its cause and nature would be desirable; but with our limited knowledge it may be broadly described as a sensory disturbance, and the physiology and pathology of the condition is rather foreign to the subject under consideration.

Musser divides pain into "peripheral," due to some disturbance affecting the nerves or nerve roots; "central," when the lesions are on the brain; and "general," which includes that pain depending on toxic conditions of the blood or disturbances of the nervous system on a whole, the disturbance showing itself as pain in regions of least resistance. While this no doubt represents a natural division of the subject, its value in diagnosis is questionable, as the nature of the disease frequently requires to be ascertained before it is possible to classify the pain.

Any classification of pain as to its quality is unsatisfactory, and the association of certain kinds of pain with definite states of disease, while possible in some cases, is not of general application. Description in as simple language as possible, and the adjectives boring, stabbing and aching, are sufficiently expressive of the patient's sufferings.

The *mode of onset* has to be considered, and in general the sudden or gradual onset are proportionate to similar states of disease, though there is naturally no invariable association in either case with the severity of the affection.

The *duration of pain* and its intermittent, remittent, constant or periodic character, is of distinct importance in diagnosis, though here as well no absolute rule can be formulated.

The *time of occurence,* with reference to the various periods in one's daily cycle, are often of great value, especially so in disease of viscera having periodical functions, as the stomach or bladder, when pain may be the most diagnostic of all the symptoms present.

The *degree or intensity* of the painful sensation does not furnish any definite information, as individuals vary immensely in their susceptibility to pain, in the actual distress experienced, and in their manner of showing it; nor does the intensity of the sensation indicate a proportionate severity of the affection producing the pain. Usually, however, if the pain is extreme in its severity a serious condition is indicated; but the reverse by no means holds true, and a very malignant disease may exist with a minimum of actual pain.

The *modification* of pain by pressure, movement, rest and so forth, also furnish a certain amount of information.

Location modifies both the character and degree of pain, an inflammatory disturbance in a dense structure like bone exhibiting a greater degree of pain than would be experienced in a more lax tissue. The typical stabbing or cutting pain of pleurisy bears no close resemblance to the pain in osteomyelitis, but typical phonomenon are rather against the rule, in the science of medicine; so that it is quite possible for any different anatomical structures to show confusion in their painful manifestations.

So far we have been considering platitudes, and the process has been rather indefinite.

In the *New York Medical Journal* (Vol. 69, 1870), pain is studied from a clinical standpoint by W. H. Thompson, where he endeavours to classify it according to its etiology, stating that much may be learned of the cause by an intelligent observation of the patient's gestures in describing his malady. The idea is easily understood, as an individual who has an acutely inflamed knee joint will be much more diffident in the manner he handles the part than he would be were he suffering from muscular rheumatism.

As his first division he takes inflammatory pain, and defines it as being increased on pressure, having the maximum intensity at the seat of the inflammation, being increased on movement and interfering with the normal function of the part.

All these factors, however, cannot be appreciated in every instance, though usually sufficient will be present to give an indication of the condition causing the disturbance. The fact of such pain being increased on pressure is taken advantage of in differentiating spasmodic from inflammatory affection of the bowels. That the pain in inflammation is always maximum at the seat of the disease may be restricted with the proviso, when pressure is applied. Appendicitis, in which pain is a very prominent symptom, is by no means definitely localized at first, though subsequently it is felt in the region where the morbid process is taking place; and anyone who has suffered from a severe toothache, the result of an ulceration or abscess, is well aware that the severest distress may be experienced in parts quite remote from the original disturbance. Tenderness on pressure is also not diagnostic of inflammation, as Hilton shows in differentiating an inflamed from an irritable ulcer, and he adduces an increase of heat in the part as the pathognomonic symptom.

The next variety of pain in this classification is that produced by pressure, and the continuous character and wide radiations are the chief distinguishing features of such a derangement. One would naturally expect in the subjection of any nerve trunk to direct pressure to have some manifestation of the disturbance in the peripheral distribution of the filaments but any pathological process in sensory nerves devoted to painful sensations in their continuity, might also show the pain in regions from which they normally convey stimuli.

Derangement of function, which is regarded as one of the chief diagnostic points in inflammatory pain, may occur in certan regions of the body and notably the brain, when subjected to pressure, and quite easily may be confused with an inflammatory process; and when both obtain at the same time, the possibility of ascertaining the cause definitely, other things being equal, is problematical.

Stretching pains, illustrated by colic and sprains, form the third division. The special characteristic is the suddenness with which such are ushered in; and another quality of this class is the associated superficial tenderness, which is especially marked in the case of sprains.

Other affections with a totally different causation may set in with very sudden pain, and biliary and nephritic colic have often been mistaken for appendicitis or *vice versa*; but in the absence of other definite symptoms, an appreciation of the spasmodic character of the pain may be of distinct value in classifying the ailment.

Neuralgic pain forms the fourth division of the subject, and although varying very much in its manifestation and intensity, it is characterized throughout by its intermittency. By the term neuralgia we usually understand a painful affection of the nerves associated with tender points in their course. Thomson, however, discards this definition and subdivides neuralgia into febrile and toxic.

Now, febrile, and toxic and non-toxic all show intermittency in their manifestations. Under the first heading he includes the indefinite pains of fever, under the second the pains of any chronic poisoning unaccompanied by fever, such as lead poisoning or Bright's disease. The non-toxic form may be due to the irritation of a nerve by some foreign body, and may also be represented by angina pectoris and the painful crisis in tabes dorsalis.

What advantage such an exhaustive classification, depending for its existence on one feature common to all, will afford in the recognition of disease, does not appear very evident; as it is reasonable to suppose that other states of pain may also show an intermittent character.

Subjective pains, as seen in hysteria, are very various, and get recognition by their fleeting character, and possibly in many cases by the extreme superficial quality of the sensation.

Frequently they afford the only means in diagnosing the psychosis, though the possibility of error is great, and hysteria can simulate almost any painful disease.

Cutaneous reflex pain forms the last division of the subject. This was first described by Head, who applied the name to pain which could be elicited on the surface of the body in disease of the viscera, the painful points being brought out by lightly touching the cutaneous surface with some blunt instrument, definite skin areas corresponding to definite organs. Head has prepared elaborate charts showing the seats of this reflex pain in internal disease. Its absence indicates nothing; so that, taking into consideration the complicated charts and the one-sided information obtainable, it does not appear at all probable that the medical student will add a roll of colored charts to his stethescope as an aid in physical diagnosis.

The general value of a classification such as Thomson furnishes, one can readily appreciate, but it is obvious that all pain cannot be limited to one particular division, and it is natural to suppose that the pain experienced in many diseases, may depend on a variety of circumstances.

For the purposes of description, diseases may be more or less roughly divided, according to the manner they manifest or do not manifest pain.

In the first place, there is a certain number of affections not necessarily presenting common pathological lesions, which do not show pain as a primary feature, and it is not till the disease has progressed to such an extent that complete resolution or cure is impossible, that pain occurs, though even pain, as we understand it, may not be present throughout the whole course of the disease. Carcinoma and sarcoma form the most valuable examples of this class, but almost any pathological process of the organs, if sufficiently chronic, may be unattended by pain, and it is for some functional disturbance that the physician is first consulted. No absolute rule, however, can be formulated, and it is plain that the location of the nerve growth and its relation to nerves, will determine to a great extent the existence of pain, so that in some cases the pain may be severe at an early stage. In many diseases of the nervous seystem, pain is absent, though not invariably, and when present is often of great value in determining the nature and extent of the lesion.

The absence of any reaction to painful sensation is pathognomonic of syringomyelia, although in the classical onset of tho disease, there are irregular pains.

The second class includes in a general way acute affections and acute systemic disorders, in which pain is usually present from the onset, but only incidentally, so to speak, the severity of the other symptoms leading us to expect a sensory disorder. Anyone will have noticed how much acute infectious disorders, whether local or general, resemble each other in the onset, and pain in the back and legs may be ascribed to a symptom more or less common to all. Naturally such a symptom present in so many diseases will furnish no diagnosis beyond referring the condition under investigation to a general class of ailments, but which is frequently more easily affected by the other symptoms present. Headaches are also a manifestation of pain common in acute disturbances, but their causes are so manifold and their location and character or quality vary so widely, that a separate consideration would be necessary to do justice to the subject.

In small-pox, influenza and dengue, this initial pain is especially marked, and in small-pox, " Severe pain, chiefly in the lumbar region, accompanied by severe frontal headache and vomiting, justifies precautionary measures in an epidemic before the eruption is present " (Osler). The most prominent symptom of influenza is usually the general soreness of which its victims complain, and dengue has obtained the name of " break-bone fever," on account of the pain in the muscles and joints and its severe boring character in the bones.

Although the disturbance be of very great severity, it does not furnish sufficient evidence for a definite diagnosis, as these affections may not manifest pain to such an extreme degree, and also the geographical locality or presence of an epidemic must be considered. Moreover, other fevers in certain individuals may show an exaggerated condition of their usual onset. Acute inflammatory disorders of some of the viscera, such as the kidney, may show a certain amount of accompanying pain, which occasionally is very suggestive.

The third class is that large number of diseases or derangements in which pain is the only symptom present, and it is here that a proper estimation of the variety of pain present, and an accurate knowledge of the distribution and connections of nerve trunks affords almost the only menas of diagnosis. Hilton says, that if a patient presents himself to a surgeon complaining of pain in any region of his body, and there is no evidence of any cause by any other symptoms, the surgeon should ask himself, what association of nerves will explain the pain. And he lays down the axiom, "that pain felt in any part must be accounted for by the nerves of that part." Also, he further states that by following centripetally the nerves supplying the part, the cause of pain may be ascertained. As an example of this, and one familiar to all, he mentions spinal caries, where one of the earliest symptoms present may be pain in the arms, epigastric or hypogastric regions, depending on the site of the morbid process, whether cervical, dorsal or lumbar, and obviously due to some disturbance of the nerve roots with a peripheral manifestation in pain.

The existence of girdle pain or bilateral and symmetrical pain would also imply a bilateral state of disease, and furnish more or less reliable information as to the extent of the pathological condition. So also the presence of pain in the auditory canal may exist quite apart from any local lesion, but the cause will be found in some other part of the distribution of the fifth nerve. Such pain is fairly frequent in malignant disease attacking the side of the tongue, and most of us are unfortunate enough to know that an aching tooth may cause very severe earache.

In regions like the head, where there are several distinct nerves supplying parts in close apposition, the exact location of pain is naturally very important.

Another common example is the pain experienced at the knee in hip-joint disease, but there are so many other examples that the general idea is all that is required, an accurate knowledge of anatomy furnishing a fair guide for most cases.

Another class of referred pain and differing slightly from the foregoing, is seen in the pain occasionally experienced in the tips of the shoulder, which occurs in affections of the pleura, intrathoracic growths and notably in liver disease, and is probably explained by the connections of the phrenic nerve with the third and fourth cervical nerves, which have a distribution to the cutaneous surface over the shoulder.

Pain between the shoulders and spreading over the inferior angles of the scapulæ, often attributed to rheumatism, is frequently an indication of disease of the stomach, and by considering the connections of the fourth, fifth, and sixth dorsal nerves, which are distributed in that region, with the great splanchnic nerve through the ganglia above the sixth and the splanchnic distribution below, a reasonable explanation of the distant disturbance is afforded.

Hilton arbitrarily divides the back into three divisions; first, high up between the shoulders, where pain is felt in disease within the thorax; second, between the middle and lower parts of the scapulæ, where disease of the digestive viscera is manifested in pain; and thirdly, the surface in the lumbar region, where pain is associated with local disease in the loins, and disease of the ascending and descending colons, kidneys, ureters and testicles.

The old teleological idea, as expressed by Hilton, that this superficial manifestation of pain in internal disease was a merciful dispensation of Providence, to enable us to recognize pathological states in our internal economy, must give place in the light of general application, and our present state of knowledge, to the view held by James Ross in his paper "On the segmental distribution of sensory disorders," (*Brain*, Vol. X.), *viz.*, that this cutaneous referred pain may be explained in point of locality, by considering the changes in position which take place in some organs, in the development of the human organism. In studying the disturbances in sensation caused by disease of the viscera, he draws attention to the fact that pain may be present on the surface of the body, and in some cases over the affected organ, while in others in parts more or less remote, and that these areas correspond with the primary position of the organ.

This peripheral manifestation he terms somatic pain, in contradistinction to the deep-seated indefinite pain, which may exist in diseased conditions of the viscera. This cutaneous pain may be the only symptom of any severity present in many cases, and a knowledge of the various seats of somatic representation may materially aid in making a diagnosis. In diseases of the lungs and pleura, in pneumonia, for example, there may be pain in the part affected of a full, deep-seated character, but pain is also frequent in the mid-sternal regions, and in pleurisy, while the pain may be most noticeable over the seat of the disease, pain in the abdomen is quite frequent, as a result of pressure on the inter-costal nerves in their course, and pain may even be present on the side of the chest which is not involved by the disease.

The somatic manifestations indicative of heart disease may be precordial, extend to the left shoulder, and radiate down the corresponding arm. When present, this is sometimes of value in determining cardiac affections, but Broadbent remarks, that when a patient complains of pain over the heart, it is usually fair presumption of the absence of disease.

A patient at the General Hospital this year complained of pain very similar to cardiac disturbance, but affecting the right side and arm, and which was more suggestive of a growth to the right of the median line of the thorax. On examination an aneurism of the ascending aorta was found projecting well to the right, and evidently disturbing the cardiac plexus of that side or the phrenic nerve, giving rise to the pain in the shoulder and arm.

Pain is frequently the sole manifestation of angina pectoris, and the agonizing quality of the disturbance may be the only means of differentiating it from a neurotic condition.

The absence of pain, however, indicates nothing, or rather is of no diagnostic value in the more common affections of the heart, as in an analysis of 482 cases of valvular disease, pain was present in 127 cases only (Not hægel).

Inflammatory affections of the pericardium also may exist without showing any sensory disturbance, contrary to a very general rule, that acute conditions of serous membranes are painful, while similar states of mucous membranes are comparatively painless.

In disease of the stomach pain may be felt over the seat of the organ or referred to the chest and back, and is a fairly frequent accompaniment of gastric disturbance, though its manifestations need not conform to the characteristic expression one might expect from the pathological process at work.

Inflammatory states, if severe, are usually recognized, but in the functional disturbances, motor and secretory neurosis, many of which show pain, the pain will usually be found to bear some relation to the kind of food ingested or to the time of day corresponding with the physiological variation in the stomach contents. Gastralgia, on the other hand, may bear no relation to food or time, and render confusion with other disorders more probable, especially so as this condition may be both symptomatic or idiopathic.

Diseases of the liver and gall bladder have their somatic distribution in the right hypochondrium, extending to the inferior angle of the scapula. Liver disease only incidentally gives evidence of its existence in pain, and biliary colic is often the only symptom we have in disease of the gall bladder.

In an old number of the *Lancet*, a medical man, who had been a constant sufferer from biliary colic, states that after having carefully observed his own symptoms and the symptoms of others similarly affected, he had arrived at the conclusion that severe pain beginning about the tenth or eleventh dorsal vertebræ, passing around the body to the right or left hypochondrium and lower abdomen, and radiating to the right nipple, but never higher, was pathognomonic of an impacted bile stone.

Difficulty, however, still exists in the absence of other definite symptoms in distinguishing such a condition from gastralgia, perforation or acute pancreatitis and possibly the gastric crisis in tabes.

An infract of the spleen may show pain from the resultant peritonitis, and disordered states of the bowel may give evidence of disease by more or less pain in the lower regions of the back. Pain is, of course, present in peritonitis and intestinal obstruction or strangulation, but the additional symptom of vomiting furnishes us with the most reliable information.

In disease of the kidney, the pain in the back or loins, which occasionally occurs, is to a certain extent useful but the radiation of pain down the inguinal and genitocrural nerves to the testicle in disease of the pelvis and ureter is very suggestive.

Pain from bladder disease varys very much with the cause, both in the region in which it is felt and with regard to the time when experienced, and stone, cystitis or prostatitis will give a different character and position to the pain.

The testicle has areas of referred pain in the veins and along the ilioinguinal nerve, but very fatal disease of that organ may exist without any local disturbance.

The female organs of generation in general show somatic pain in the left lower quadrant of the abdomen, and on the back of the socrum, but the nervous connections of these organs are so intricate that pain may be experienced in parts of the body so remote, that it is frequently necessary to regard these manifestations as due to a debilitated state of the whole nervous system.

It is perfectly evident that there are many other localities, apart from those mentioned, where pain may be significant of disease: and the association of tender points with many injuries may often afford valuable information; but after even a most minute consideration of the existence of pain in disease,

There will always exist a class of cases where pain is the only symptom and to which no restricted rule can be applied, and it is here that the application of Hilton's axiom, "that pain felt in any part must be expressed by the nerves supplying the part," will be the only aid.

Pain whenever present, must be regarded as an important symptom but its value in determining the nature of the pathological process is practically limited to the inflammatory variety, though the other kinds will show the mechanical cause of the disturbance.

In an article of the *Lancet* of 1859, which considers a number of cases of disease showing pain as the sole symptom, pain is regarded as an important symptom, " when it exists without an assignable cause, continues without early evidence of disease, and its locality is not defined, when its removal is not affected by medical aid, when local examination does not add to its severity and when the general condition is not at first affected," probably pain conforming to all these conditions would be a more important symptom from a surgical point of view with the possibility of clinching the diagnosis by an exploratory laparatomy, but it is very doubtful whether any final-year man would care to have as his first patient, one who showed no other symptom than pain.

THE

MONTREAL MEDICAL JOURNAL.

VOL. XXXI. JULY, 1902. No. 7.

Original Communications.

ADDRESS ON SURGERY.

BY

GEORGE E. ARMSTRONG, M.D.,
Associate Professor of Clinical Medicine, McGill University; Surgeon to the Montreal General Hospital.

Mr. President and Members of the Nova Scotia Medical Society :—

My first duty is to thank you for the great honour—for so I esteem it—extended to me in inviting me to read before you at this Annual Meeting, the address in Surgery.

My second duty is most painful ; would that a readier pen could undertake the task. My invitation came from your then Secretary, the late Dr. Muir, a dear friend to, not only the speaker, but to every medical man in our great Dominion, and to everything good and noble in our profession; a man with a great heart, who for years wielded a tremendous influence in the Maritime Provinces and throughout Canada, in fact, wherever he was known. I venture to say that not only in your local associations but at the meetings of the Canada Medical Association, no face was more welcome, no member more warmly received, from Charlottetown to Banff, than the late Dr. Muir of Truro. Brim full of strength and good fellowship, he always stood for what was honourable and just. But alas, he is gone all too soon. May his influence long live after him !

My third duty is indeed a difficult one. I take it that the reader of an address in Surgery at an annual meeting, should not take the opportunity of reading a paper, but that he should, as far as possible, give a resumé of the work done during the year and perhaps give a forecast of the most promising lines for fruitful labour in the years to come.

I am rather unfortunately placed. The readers of addresses two years ago were allowed the liberty of reviewing a century of progress, and one year ago the same gentlemen were allowed to speculate on what our new century might reasonably be expected to accomplish. This year neither the historian nor the imaginative speculator have place. I find myself more in the position of the business man—required to take stock, as it were, and to estimate the position of Surgery to-day as compared with that of twelve months ago.

During this time Surgery has not stood still. Progress has been made in many directions and the future never looked more promising. Our relations with the physicians continue to be friendly. We are able to render them aid in the treatment of some of their cases of epilepsy, and even in exophthalmic goitre.

The Surgery of pulmonary abscesses and pulmonary gangrene is, with improved technique and increased experience, accomplishing results most satisfactory to both the physician and the patient, although to this subject Hippocrates' first aphorism is particularly applicable. "Life is short, and the art long; the occasion fleeting; experience fallacious, and judgment difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and externals co-operate." Eisendrath in a recent monograph has shown the results obtained in recent years to be most encouraging, and also the slow development of the idea of treating these cases surgically. Although it was first attempted in the days of Hippocrates, and was a live question 200 years ago, it is only during the past 30 years that Surgery has really established a position in this field.

It may be said that abscess follows croupous pneumonia in 1.2 to 1.5 per cent., and that gangrene is a more frequent sequel of influenza pneumonia, occurring according to Frænkel in 7.5 per cent. of all cases. It must be admitted that the medical treatment of these cases is often most unsatisfactory to all concerned. It is the more pleasing then to find Eisendrath has been "able to demonstrate the value of surgical interference in pulmonary lesions following pneumonia" in 93 cases. In detail, there were—25 cases of acute simple abscess, 24 recovered, one improved and no deaths; 28 cases of acute gangrene, 20 recovered, 2 improved, 6 died; 14 cases of chronic simple abscess with bronchiectasis, 6 recovered, 3 improved and 5 died; 26 cases of chronic putrid abscess with bronchiectasis, 13 recovered, 4 improved and 9 died.

The results of surgical interference in acute cases have been so much better than in chronic that it suggests a very careful enquiry into the question of when to operate? Many cases of pulmonary abscess have healed spontaneously under medical treatment. How long one should wait for such a happy result without imperiling the future prospects of the patient or seriously lessening the chances of the surgeon to bring about a satisfactory result is a very important enquiry to be made.

In cases of long standing the thickened walls of the abscess cavity retard seriously the closing after evacuation and drainage. I have found in some cases I have operated on, that the bronchus opened into the very top of the abscess cavity. The erect position of the patient favours by gravity the development and accentuation of this relation of cavity to opening. Bronchiectasis is another very undesirable sequel.

Before opening an abscess of the lung it is most important to make sure that the visceral and parietal layers of the pleura are adherent at the point selected for the puncture. The presence or absence of these adhesions cannot be determined by the duration of the disease. Eisendrath, from statistics and personal observation, came to the conclusion that they are present in 90 per cent. of cases, but that all tests to determine the point in an individual case are fallacious. Several devices have been resorted to to develop these adhesions. In two cases I adopted the method first suggested by Roux in 1892, viz.: To remove a section of rib and then with a round curved needle to suture the two layers together. If pneumothorax should occur with collapse of the lung, it would probably disappear in a few weeks. If, however, the septic contents of a simple or gangrenous abscess cavity should gain entrance into the pleural cavity, the result might be disastrous.

Intra-cranial surgery gives promise of increased usefulness in the near future. Surgical technique is now such that the opening of the skull may be undertaken with confidence when conditions demand it. It is now not only justifiable but a duty to remove a localised subdural clot from the middle meningeal fornix, also to elevate simple depressed fracture, to remove spicules of bone from the brain and to empty cysts.

Page, in his Presidential address before the Neurological Society, has given instances of great relief following each of these operations, in some instances restoring to a life of usefulness.

One cannot consider the closer relation of Surgery to Medicine without pointing to the increasingly good results attained in typhoid perforation.

There are many complications and sequelæ of enteric fever requiring the aid of Surgery. I may mention the occasionally widespread infections of bones, and joints, and infection of the bile passages, but it is in that dreaded and fatal perforation of the intestine that the physician and surgeon together have already accomplished much, and I think are likely to accomplish more.

We have had in the Montreal General Hospital during the past six years, 34 cases of typhoid perforation of the small intestine. Of these we have been able to save 18.18 per cent.

The diagnosis of this lesion presents only too often the greatest difficulty. We have not found the blood count to be a reliable guide as a diagnostic sign. It may be present to the extent of ten or more thousand leucocytes without the presence of perforation and it was absent in one case twelve hours after the occurrence of symptoms of perforation, although when the abdomen was opened a perforation was found.

One very important point to remember in dealing with these cases is that in the majority the occurrence of a typhoid perforation is not at all clearly indicated by any well marked group of symptoms. On the contrary, one must be on the alert to notice the first indication. The onset is so insidious that in some cases the House Physician has not thought it necessary to report to his chief, who has discovered the serious condition only when making his ordinary ward visit.

We place reliance upon the occurrence of pain, when persistent and accompanied by persistent local tenderness, change in the character of the respirations, from abdominal to thoracic, and abdominal rigidity. There may or may not be vomiting. The temperature may fall or rise or remain stationary, and the pulse may for some hours show wonderfully little alteration. The diagnosis is exceedingly difficult and sometimes impossible in patients who are suffering from typhoid toxæmia, and distended tympanitic abdomen.

The experienced and observant physician and surgeon can generally, however, arrive at a pretty accurate diagnosis, but there are a group of cases which in spite of the greatest care and the use of every known test, may yet remain in doubt. It is in these cases that, I believe, proper facilities being available, the more truly conservative procedure is to make an exploratory incision. In some cases this may be done under local anæsthesia, a little ether being given later if found necessary.

Although the success so far obtained is encouraging and many lives have been saved, I believe a much larger percentage of recoveries will follow in the near future as the result of a greater experience in diagnosing. Surgeons are not all agreed as to the time to operate, some advocating delay until shock has passed away, and others, very early interference. In the Montreal General Hospital, of the cases operated on during the first 12 hours, 40 per cent. recovered, and of those operated on during the second 12 hours, only 10 per cent. recovered. It is therefore quite natural for me to advocate the early operation—operate before shock has time to develop—and while the infection is localised. Operations for general diffuse septic peritonitis are not likely to give better results here than elsewhere.

Surgery is coming to the aid of the physician in one field which is distinctly new, viz.: in the treatment of certain conditions of the kidney. Reginald Harrison and Edebohls are the pioneers of this new departure. The work of these two men must not, however, be confounded. Harrison has done service in two distinct conditions, first, in separating adhesions around the kidney he has relieved painful conditions, and secondly, by incising the capsule of the kidney he claims to have relieved a pressure amounting to almost strangulation, in acute inflammatory conditions, and by so doing saved the life of the patients.

Edebohls' work is in a totally different class and on an entirely new theory. In certain chronic conditions, by stripping off the capsule and anchoring the kidney, he claims to force the establishment of a new forced circulation with a resuming of the normal secreting and excreting functions of the kidneys.

It is too soon to pass judgment either on Harrison's incision of the capsule in acute congestive conditions of the kidney, or on Edebohls' decapsulation in chronic Bright's disease, but both suggestions are worthy of consideration and may bear good fruit in the future. They at any rate established a new borderland subject for the mutual study of the physician and surgeon, and form a new link for the closer drawing together of these two great departments, Medicine and Surgery.

The relation of general surgery to gynæcology in Canada is still friendly and likely to remain so as long as the Canadian gynæcologists maintain their present high character and scientific excellence. In the great republic to the south of us it would almost seem as if gynæcology was being slowly but surely absorbed by the general surgeon.

Although it is 140 years since Lambert, of Newcastle, first sutured successfully a wound of the common carotid artery, the practice has only recently been brought prominently before the profession. A. E. Halstead, of Chicago, in a recent article of great interest, has put before us a record of the work done on arteries. It is clearly established that large arteries may be successfully sutured. After a wound, involving half the circumference of the vessel, the sutured vessel remains perfectly patent. If the wound involves the whole circumference, the vessel gradually contracts, as the result of endothelial proliferation, the lumen in most cases finally becomes obliterated, but so slowly that the collateral circulation has time to become established before the blood stream, through the main vessel, is stopped. It is not likely that the surgeon will often find it necessary to resort to suture, but such instances do arise, as in Halstead's case. In removing a current malignant nodule, the axillary artery was wounded. At the previous operation the vessels which should carry on the collateral circulation had been divided. He therefore sutured the wound in the artery and two months afterwards "there was still a radial pulse on the left side of a volume equal to that on the right." Any increased power to control hæmorrhage and to conserve important vessels is welcome—and there may arise contingencies in which this last resource may prove of value.

Most interesting is the work on the pancreas accomplished recently. The surgical advances have been most clearly put before the profession by Mayo Robson, of Leeds.

I think one may say that progress has been made in the treatment of malignant disease. The mortality rate is being lowered year by year. Two important principles now unanimously conceded give us a grasp of the subject and courage as well. That cancer is primarily a local disease, and that, in many cases at any rate, there is a precancerous stage, are now two well established facts, which it would seem at first sight should enable us to completely subjugate this terrible disease. We also know by what channels it spreads. Unfortunately the onset of carcinoma is often very insidious. It gives rise to so little pain or discomfort and increases so slowly that often, before the victim is aware, the conditions permitting complete eradication have passed. Not only is this true of the rectum, stomach and uterus, but it is astonishing how great advance may be made in the breast or even the tongue before suspicions of its existence are aroused. Nevertheless by a greater watchfulness on the part of the patient and of the family physician and our improved methods of diagnosis, we can say that in cancer of the breast over 50 per cent. are cured.

Butlin in a carefully worded paragraph says, "If patients suffering from cancer of the breast and their medical men can be educated to hope for good results from early operations, and if the latter can be trained to detect cancer of the breast before it is adherent to the skin and associated with enlargement of the lymphatic glands, there is every reason to believe that a higher percentage than fifty would be reached by the routine employment of extensive operations properly adapted to the conditions and course of the disease."

With our present knowledge we may say that no one should die of cancer of the breast, or tongue, or stomach, or rectum. But this

Utopian condition can only be approached by a careful study of this process in its very earliest manifestations and thorough extirpation the moment it is recognized, or seriously suspected. This idea of a pre-cancerous stage should enter more largely into the thoughts of the family medical adviser. Advice regarding the care of the mouth and teeth, the insistence upon absence from smoking during the secondary manifestations of syphilis—the care of the breast during gestation and lactation, may sometimes prevent the development of a locus minoris resistentiæ, and later on the pathological process called cancer. While we wait for the discovery of the cause of cancer and dream of an antitoxin that will prove curative, let us make the most of present knowledge, and by removing as far as possible all suspicious influences, by zeal in striving to recognize the earliest indication of malignant growth, and by thorough removal as early as possible, to lessen the death rate from malignant disease.

There has developed recently a disposition on the part of both the physician and the surgeon to resort more frequently to surgery in dealing with non-malignant conditions of the stomach. There are cases of persistent ulcer of the stomach, persistent from deficient reparative power on the part of the patient and often, I suspect, persistent because of the unfaithfulness of the patient in carrying out conscientiously the directions of the physician, that are best treated by surgical methods. Here again we are greatly indebted to Mayo Robson. He has shown clearly the satisfactory results to be obtained by open incision, curetting of the base, followed by pyloroplasty, or better still by gastro-enterostomy. I can personally speak highly of the results of gastro-enterostomy, performed in suitable cases of persistent chronic gastric ulcer. These people are quickly transformed from a life of chronic invalidism to comparatively good health, and of usefulness. In the presence of an ulcerative perforation of the stomach wall or of uncontrollable hæmorrhage, surgery is doing splendid work in the saving of life. Death should but rarely result to-day from either gastric perforation or gastric hæmorrhage.

The reader of an address in surgery can hardly pass over without mentioning some of the more recent suggestions which, while as yet more or less visionary, may bear fruit in the near future.

It is suggested, for example, that internal hydrocephalus may be successfully treated surgically by establishing a communication between the ventricle and the subarachnoid space. This communication is to be brought about by placing a horse hair drain between these spaces. It is also proposed by the same means to drain a meningocele into the peritoneal cavity. You probably also have read the bold suggestion of

Lauder Brunton, to incise a narrowed mitral orifice. These ideas seem to us wild and impracticable, but in this age one cannot afford to put aside these proposals without careful thought. One may, however, probably with a saving of any little reputation he may have, adopt Oliver Wendell Holmes' advice when he said, "And with new notions—let me change the rule—don't strike the iron till it's slightly cool."

Electricity is becoming more and more useful. In the diagnosis and treatment of fracture the X-ray machine is certainly most helpful. It shows us the relation of the fragments to each other and later on it shows us whether or not we have been successful in getting them into correct apposition. This is so far so good. It serves in addition a most useful purpose in enabling us to decide what fractures may be properly treated by the open method. My plan is to take a radiograph of all simple fractures before any attempt is made at reduction. A second picture shows how far we have been successful in effecting reduction. If this second radiograph shows the fragments to be in satisfactory apposition, well and good. If they are not, the radiograph is shown to the patient and he is told that we cannot do better unless he permits us to make an incision and bring them together. The dangers of incision are fully explained as well as the deformity and limitation of movement likely to result if the fragments are left as they are. The patient may then elect to remain as he is, to submit to treatment by the open method, or to go elsewhere if he thinks someone else can do better for him. This plan I have found most satisfactory in preventing the development of strained relations between himself and his surgeon. It also prevents what otherwise might occur—one of those worrying and unseemly suits for malpractice, which fortunately are rare in our Dominion.

My experience in reducing fractures by the open method has taught me that in many instances it is impossible to reduce them otherwise satisfactorily. I have often after exposing the fragments asked students to make extension, using as much force as seemed justifiable and yet the overlapping or riding was not altogether overcome, the ends only being brought accurately together by the use of levers or by bending the limb and then straightening it, and all this time the patients were under the influence of a general anæsthetic. I have the most profound sympathy for the man who fails to perfectly reduce a simple fracture. In many instances he simply fails to accomplish the impossible under the circumstances and with the means at his command.

But electricity in the form of the X-ray machine or in the form of high tension currents is, I believe, destined to become of great therapeutic value, particularly in lupus, cutaneous epitheliomas and probably in many other pathological conditions. It may also prove serviceable in relieving pain in intractable neuralgias.

The use of cocaine as a local anæsthetic is becoming more frequent and safer. The introduction of cocaine into the spinal cord has been tried in most countries. In its present form it does not seem destined to come into very general use. I have used it in twelve cases. By its use I have in one case resected six inches of small intestine, in two cases removed the appendix vermiformis, in one case performed a radical cure for inguinal hernia, in one case removed hæmorrhoids, in one case extracted a vesical calculus, in one case circumcision, and the other cases were amputation of the foot, amputation of toe, circumcision and osteotomy for hallux valgus. In all the above cases the analgesia was perfect and extended as high as the margin of the ribs in some instances, and in others as high as the forehead. In another case, that of a young dentist suffering from acute appendicitis, it was a complete failure and I was obliged to administer ether. This was the only failure in twelve cases.

In these twelve cases vomiting occurred soon after the injection in six or 50 per cent.; profuse sweating in nine; in all of them the pulse became rapid and of poor quality during the first ten minutes, and the expression of the patient was such as to cause a feeling of uneasiness in the minds of the onlookers ; the face became pale and the features drawn. These unpleasant symptoms generally passed off before the operation was completed and the patients became talkative, were quite pleased with themselves and their surroundings and returned to the ward enthusiastic advocates of the new pain reliever. In none of these cases were there any unpleasant after effects ; none of them suffered from more than a very slight headache, and no vomiting occurred in any case after returning to the wards. The after care gave the nurses no trouble and many patients asked that when they were operated upon it should be under spinal cocainization.

Notwithstanding these favorable results I have not used it for several months. Although I have had no accident with it others have, and I confess I am afraid of it. I find that mine is not an unusual experience, a few days ago during a short visit to some of the great surgical centres to the south of us, I made it a point to enquire from surgeons what their experience had been, and they generally made answer that they had used it, had had no accident, had found the analgesia satisfactory, but had not used it lately. They seemed afraid of it. One and all, however, agreed that there was something in it, and that probably in the future some modification would be found to render it safer than at present. The kidneys did not in any of my cases appear to have been at all affected by its use.

Important advances are being made in the pathology of the blood. Although the value of the leucocyte count as a diagnostic sign has possibly been overestimated, yet that it has a distinct value none can deny. The estimation of the percentage of hæmoglobin I have found to be of distinct value in deciding that question sometimes of paramount importance—is the patient in a fit condition for operation? Operations should be undertaken only after serious consideration if the percentage of hæmoglobin present is under 50 per cent., and if less than 25 per cent. one should hesitate unless the conditions are most urgent.

The value of a knowledge of the freezing point of blood and urine is perhaps not yet correctly estimated. It is a time-consuming process. I have had the freezing point of urine determined in about 50 cases at the Montreal General Hospital, but am not yet fully convinced that great dependence can be placed upon it. Ogsten has found it of value.

Gentlemen, I have taken up so much of your time in retrospect that no room is left for prophecy. It must be evident, however, to you all that we are living in a time of great activity. There are no indications of a halt. The future never seemed to hold in hand greater promise of reward to the earnest worker. Bacteriology, Embryological Pathology, Physiological Chemistry and Serum Therapy are terms representing a few of the fields of richest promise.

I thank you, gentlemen, for your kind attention.

RESUME OF THE MORE RECENT ADVANCES IN THE ARTIFICIAL FEEDING OF INFANTS.*

BY

A. D. BLACKADER, M.D.,
Professor of Pharmacology and Therapeutics, Lecturer on Diseases of Children, McGill University; Physician to the Montreal General Hospital, etc.

The artificial feeding of young infants, difficult as it often is during the cooler months of the year, becomes a still more serious problem as the hot season approaches and we are confronted, not only with defective nutrition in its protean shapes, but also with the many forms of infantile diarrhœa. When pressed, therefore, for a paper by your ever-zealous secretary, I have fallen back on this somewhat trite, but always important subject, thinking that a short *résumé* of some of the more recent contributions to our knowledge of this subject might elicit discussion which would not be without general interest.

Most of us are convinced that fresh uncontaminated cow's milk, when properly modified, forms our best substitute for mother's milk, but its exact adaptation to the individual infant is in many instances a matter of great difficulty. Especially is this the case in very young infants, and in those whose stomachs have been already deranged by injudicious feeding.

Cow's milk differs from woman's milk chiefly in the amount and character of its proteids and in the fact that commercial cow's milk is never sterile, but is always contaminated by many forms of bacteria. The sugar constituent is always present in smaller amount, and we are told that both it and the fat constituent differ in some respects from these ingredients as found in mother's milk.

Of these differences, that between the proteids of the two milks has long been regarded as by far the most important for us as physicians. The milk of all ruminants curdles on the addition of rennet into a firm and tenacious mass more or less indigestible; in this respect it differs from the milk of animals which chew their food before swallowing it, the curd of which is much more flocculent and soft. Theoretically, therefore, the milk of the mare and the ass would supply a milk more easily adapted to the infant's wants. At the present, however, it is impossible to obtain a supply of such milk in regular and sufficient amount.

The proteid element of milk consists of albumins, globulins, and nucleo-albumins, and although chemists tell us that there are several kinds of each of these nitrogenous compounds, and that the milks of various animals differ from one another in containing different kinds, they have not as yet thrown much practical light on their differences. For us as physicians the important point to be noted is that the albumins and globulins are absorbed with little digestive effort, while the nucleo-albumins or caseinogens, are curdled by the rennet and must be digested before they can be absorbed. The curdling process in cow's milk consists essentially of a separation of the fat and the casein from the easily absorbable proteids and sugars.

---

* Read before the Montreal Medico-Chirurgical Society, June, 1902.

Now, if we enquire more carefully into the relative amounts of these several proteids in mother's and cow's milks, we shall find that while in cow's milk the proteids consist of coagulable albumin or caseinogen, 80 per cent., and of soluble albumins sometimes spoken of as lactalbumin, 20 per cent., in human milk there is of the caseinogen only 30 per cent., while of the soluble albumins there is from 60 to 70 per cent. In other words human milk contains two-thirds of its proteids in a soluble and easily absorbable condition, while of cow's milk the greater amount is, after passing through the stomach, in an insoluble state requiring prolonged digestion in the intestine before it can be absorbed. Hence in our attempts to adapt cow's milk to the digestive capacity of the infant stomach, we must remember that merely changing the several percentages does not change cow's milk into woman's milk. So long as the insoluble albumin remains in large excess, so long will infants have difficulty and often fail altogether in the digestion of such modified milk.

To overcome this difficulty with the proteids several plans have been proposed. The simplest plan perhaps is to dilute the milk with water till the percentage of proteids, although much below that of mother's milk, is *within the digestive capacity of the infant*, and then, by the addition of cream and sugar of milk, to approximate the proportion of fats and sugars to that existing in normal human milk. After the amount of dilution demanded by the infant has been ascertained, an effort should be made by slowly but steadily increasing the amount of milk in the mixture, to educate the stomach to digest the caseinogen in larger amounts, much in the same way as a gymnast trains his muscles to lift heavier weights. In this way cream or milk may, for a few days, be diluted with twelve or sixteen parts of water, reducing the proteids to 50 or even 25 per cent., but making good the deficiency in the milk sugar. Then the amount of milk may be gradually increased by small additions every few days, till, at the end of six or eight weeks, the young infant will be found to be able to digest milk diluted with only two or three parts of water, and containing 1 to 1.5 per cent. of proteids. It is a mistake to commence with a too large percentage of proteid, then after gastric derangement has occurred to continue for too long a period with too low a percentage. In this connection it is to be remembered that observations have shown that the addition of carbohydrates to milk dilutions is necessary to conserve nitrogenous metabolism and to enable the infant to gain even with a great reduction in the amount of nitrogenous element ingested.

Keller, in a recent paper in the *Centralblatt für Innere Medicin,* on the influence of the carbohydrates on the destruction of proteids in the infantile organism, states that the addition of a maltose to diluted cow's milk, decreases nitrogenous elimination in the infant. He first determined the amount of nitrogen in the urine of infants when fed upon diluted cows' milk alone, and then when maltose was added to the milk. When the dietary was cows' milk only the elimination of nitrogen was from 1000 to 1150 milligrammes, but when 60 grammes of a maltose were added to the dietary, the amount of nitrogen eliminated gradually fell to 500 milligrammes. When 100 grammes of maltose were given daily, the nitrogens eliminated fell to 380. On omitting the maltose, the nitrogen eliminated at once rose to the 1000 milligrammes again.

In infants nourished at the breast, nitrogen retention is very high, in one instance 85.5 per cent., but in infants to whom cow's milk was given without the addition of any carbohydrate, a very low retention percentage of nitrogen was obtained, while those to whom various carbohydrates were given showed retention of a distinctly greater percentage. The actual absorption of nitrogen in almost every instance was less when carbohydrates were employed than when milk was given alone. but the percentage of absorbed nitrogen retained in the system was much greater when the carbohydrates were added to the dietary. In the case of a sick infant, nine months old, suffering from a persistent gastro-enteritis, 750 cc. of cows' milk diluted with water were given daily; afterwards 500 cc., diluted similarly, but with the addition of 40 grammes of maltose. The infant lost much more under the first dietary than under the second.

2. A second method of overcoming the indigestibility of the proteids in cow's milk is by the addition of cereal gruels, which may or may not be previously digested. The value of this method has been denied by some writers, but more recent investigations have proved their mistake, and it is now acknowledged by all that milk curdled in a cereal diluent does form a distinctly softer and more flocculent curd than in a diluent of simple water. The method is an old one and was

employed by Van Swieten in the 15th Century; recently its utility has been strongly urged by both Dr. Jacobi and Dr. Chapin.

The disadvantage of the method for very young infants is that it introduces a material quite foreign to milk, and one with which their digestive powers are unfit to grapple until their salivary and pancreatic secretions have become somewhat developed. On this point, however, Dr. Jacobi, considers that a small amount of starch may be digested at the very earliest age, and my own observations lead me to think that in some cases this is so.

It is to be noted also that Rachford, in an address before the American Pediatric Society, stated that as a result of numerous experiments he found that the proteolysis of casein by the pancreatic juice was favored by the presence of a maltose or sugar solution. Commenting on the result of his experiment, he says: "We may infer from the above that the favorable influence of the cereal decoctions on casein digestion is continued even after the milk leaves the stomach and comes under the influence of the various digestive enzymes of the pancreatic juice in the intestinal canal."

The effect of the addition of an alkali in rendering the curd of cow's milk less dense was pointed out many years ago by Lehmann, who stated that human milk, when acid, yielded a much firmer coagulum than when alkaline, and cows' milk when alkaline a much looser coagulum than when acid. We know that caseinogen is precipitated from its solution by acids, and, on the other hand, that its precipitation is retarded by the presence of neutral salts. Chemists have told us that the rennet action of the stomach is facilitated by the presence of salts of lime. It appears, therefore, to be always desirable to neutralize fully the acidity of cow's milk by the addition of lime water. Harrington tells us that ordinary milk 24 hours old requires the addition of 1-16th of its volume of lime water to make its alkalinity correspond with that of breast milk, but a slight excess is in most cases of advantage, and in warm weather the addition of 10 per cent. of lime water to the milk will be found to render the coagulum distinctly less firm and more digestible.

The most recent method of adapting cow's milk to the infantile digestion, is by the use of whey in which we get rid, more or less completely, of the indigestible caseinogen. Whey is prepared from fresh cow's milk by the use of rennet, or essence of pepsin. The casein is precipitated and afterwards separated by careful straining, leaving a fluid containing all the soluble albumin, sugar and mineral matters, but none of the caseinogen and almost none of the fat. Prepared thus from fresh milk its average composition is, .32 fat, 4.75 sugar and

.80 proteid. The amount of fat may be increased by the addition of cream. Sugar of milk may also be added to raise the sugar percentage. The objections to this method are its difficulty of preparation and its expense. Its preparation will demand a good deal of time from a more than ordinary careful and intelligent mother or nurse. For this reason I have thus far had it prepared for me in the milk laboratory, and thus obtained I have succeeded with it in securing excellent results in several very difficult cases.

In one or other of these ways the difficulty in connection with the proteids of cow's milk may almost always be overcome.

Supplementary to the difficulty in the digestion of the proteids in cow's milk, is an inability to digest a due percentage of the fats. Biedert many years ago taught that an increase in the proportion of the fat element in an infant's food conserved nitrogenous metabolism and to some extent made up for a deficiency in the proteids, and in accordance with this theory introduced his cream mixtures which many of us may remember. They often gave rise to persistent vomiting, and since then experience has taught us to be very cautious in our percentages of cream. This point was emphasized at the last meeting of the American Pediatric Society by Freeman, of New York, who attributed many of the failures in the adaptation of cow's milk to the infant's digestion to the persistent employment of too large percentages of fat. The reason for the use of these high percentages is generally an effort to overcome the constipated habit so frequent in these children. While the plan may succeed excellently in some cases, in others it sets up vomiting and greatly interferes with the digestion of the other elements. Freeman found that in many of his troublesome cases good results were promptly obtained by lessening the amount of the fat element, bringing it down to 1. or 1.5 per cent., and then, as digestion improved, gradually increasing it again. This reduction at the same time enabled a much larger percentage of the proteid and sugar elements to be assimilated. He suggested that perhaps one of the reasons why such foods as condensed milk, Nestle's food, &c. have succeeded when our milk modifications have failed, was due to the fact that they contained such a small percentage of fat.

In a recent paper before the Pediatric Society, Dr. Jacobi argued against the use of milk sugar and in favor of cane sugar in our milk modification. Commercial milk sugar is often in his experience very impure, and it very readily undergoes the lactic acid fermentation. He thinks that if there is any excess of it in the food, lactic acid is developed which favors the elimination of calcium phosphate and the development of rickets.

Vaughan, on the other hand, considers that milk sugar is more readily assimilated than cane sugar by infants, and Escherich considers that the presence of a moderate amount of lactic acid in the intestine is advantageous in that it tends to prevent the development of many noxious forms of bacteria.

It may be stated, however, that milk sugar is the form generally preferred by pediatrists. It should be obtained as pure as possible and should, before it is added to the milk, be dissolved in boiling water and the solution filtered through absorbent cotton. Should pure milk sugar, however, be difficult to obtain, cane sugar may be employed but in only half the quantity, owing to its greater sweetness.

It is extremely important that the milk employed in infant feeding be obtained with such careful precautions as to render it practically free from contaminating bacteria. It is not always our good fortune, however, to be able to obtain such with a regularity necessary for the daily preparation of an infant's food, and when the supply cannot be depended upon it appears the lesser of two evils to have the milk pasteurized at the lowest efficient temperature ; viz. : from 150° F. to 157°F. Milk sterilised over 160°F, is altered to an extent varying according to the elevation of the temperature employed and the duration of the exposure, in the following respects:—The proteids are modified and rendered less digestible ; the combination of the saline ingredients with the proteids appears to some extent to be broken up, and the salts assume a condition in which they are less readily absorbed; the natural ferments whose presence in milk may with much probability be inferred, and which may materially assist its digestion in the infant's stomach, are destroyed; and an alteration takes place in the emulsion normal to milk which may also have a distinct effect in lessening its digestibility by the infant.

Milk obtained in the country from healthy pasture-fed cow's milked in the open fields certainly is better not sterilized, but milk obtained in the city from more or less unknown sources, and under unknown conditions, should, in my opinion, be pasteurized, especially in summer weather.

The following practical points may be emphasized. An infant fed at the breast, who suffers persistent indigestion and at the same time fails to gain in weight, should be taken from that breast. If, however, the infant gains in weight it is better to try and correct the indigestion by treatment directed both to mother and child. To attempt artificial feeding in such a case often only adds to our troubles.

In commencing artificial feeding begin with a weak mixture, and work up by frequent but slight changes to a point of tolerance. By still continuing a gradual but steady increase, never beyond the point of easy digestibility, we can in a few weeks attain to a food sufficiently nutritious in all its ingredients and yet fully digestible and assimilable. It is a serious mistake to begin on a mixture too strong, and work down after weeks of indigestion to the point of tolerance.

The question how long an infant should be kept on a modified milk diet is an important one. It is generally conceded that by the tenth or twelfth month a child should be able to digest almost pure milk. By this time, however, I prefer a mixed dietary. Milk is very deficient in iron. An infant comes into the world with a high percentage of hæmoglobin; this gradually diminishes so long as he is fed on milk alone. Only when a mixed diet is substituted for a pure milk diet does the percentage begin to rise again. Cereals and meat juice and broths are rich in iron.

Oatmeal is amongst the richest in iron of the cereals and properly cooked forms a useful addition to the infant's dietary. Shortly after the first twelve months eggs lightly cooked may be permitted at one of the meals in the day. The great richness of the yolk in fat, lime salts, and in the organic compounds of phosphorus and iron, makes it a valuable food for the rapidly developing child. At this period also, food involving somewhat long mastication, such as biscuits and crusts of bread, become necessary. The process of mastication develops the maxillary bones, and the associated muscles, while disuse of the jaws starves the area supplied by the maxillary arteries, leading to their imperfect development. The bone remains small, the teeth are crowded and imperfectly nourished, and dental caries, so disastrous to the growing child, becomes inevitable.

MYASTHENIA GRAVIS.

BY

F. G. FINLEY, M.D.,

Assistant Professor of Medicine and Associate Professor of Clinical Medicine, McGill University; Physician to the Montreal General Hospital.

This condition was first recorded by Wilks (Guys Hospital Reports, 1877), who published a brief report of a case of bulbar paralysis without anatomical lesions. The most important study of the disease published in English is that of Campbell and Bramwell, as a critical digest in *Brain*, 1900, and includes a synopsis of 60 cases. Oppenheim (Berlin, 1901) has recently published a complete monograph on the subject in which he has collected 79 cases, including most of those recorded in Campbell and Bramwell's article.

In America but few cases have been so far reported. In addition to those referred to in the above mentioned publications, cases have been published by Sanger Brown (*Med. Rec.*, Vol. 2, 1900), Jacoby (*Med. News*, 1901), by Down, and by H. T. Patrick (*Jn. Nerv. and Mental Dis.*, 1902), and by Buist and Wood (*Jn. Am. Med. Assoc.*, 1901).

As the disease is a comparatively rare one, and as it is not yet very generally recognized, it may be permissible to give a brief sketch of its more important features.

The onset of the malady is usually gradual. The muscles most frequently involved are those innervated by the bulbar nerves, and the external muscles of the eyes, in many instances both groups being affected. The muscles of the limbs and of the back of the neck are also frequently attacked.

In the eyes the first symptom noted is usually drooping of the lids, often more marked on one side than the other. Diplopia, resulting from paresis of the orbital muscles is also frequently present, and is characterized by the alterations of the relative positions of the images at different periods. The internal muscles of the eye almost invariably escape; in one or two doubtful instances their involvement has been noted. Eulenburg (*Deut. Med. Woch.*, 1898, 1. p. 6) records a case with dilation of the pupil and slow reaction to light, but the white colour of the optic disc throws some doubt on the nature of the case.

When the bulbar nerves are affected, the symptoms simulate those of bulbar paralysis. The lips are weak, the patient unable to whistle, and there may even be dribbling of saliva. In consequence of the weakness of the facial muscles the face has often an expressionless aspect, especially about the mouth. The tongue is weak and occasionally shows a slight but not well-pronounced tremor. The soft palate shares in the weakness, and accompanying this, there is a nasal intonation with occasional regurgitation of fluids through the nose. Difficulty in swallowing is rarely absent, and fluids are more readily taken than solids.

---

* Read before the Montreal Medico-Chirurgical Society, May 16, 1902.

The muscles of mastication very frequently, indeed, almost constantly, suffer early and to a marked degree, and as they escape or are only attacked late in true bulbar palsy, their involvment is of considerable significance in the diagnosis of the condition. Oppenheim suggests the term of *dysmasesia* to express the difficulty experienced in mastication.

The laryngeal muscles seldom show such a degree of paresis as to lead to serious disturbance of function, such as hoarseness, aphonia or stridor. Weakness of both abductors and adductors has been observed. One cord only may be paralyzed or present limitation of movement, and the defects in movement have been noticed to become more pronounced after use. Anæsthesia of the larynx and abolition of the pharyngeal reflex have been observed in a few instances.

The muscles of the limbs and of the back of the neck are frequently weak, and in occasional instances are the first to become involved. Inability to hold the head erect is a common manifestation, and it may require support by the hands. The respiratory muscles are occasionally involved, explaining the presence of dyspnœa which is often found on slight exertion. Inability to walk any distance is often present, and in extreme cases any muscular movement is performed with difficulty.

A very characteristic feature of the muscular weakness is that it is rapidly induced by exertion. The jaw muscles rapidly tire and become incapable of powerful contraction, and at the latter part of a meal much difficulty may be experienced in mastication.

The tired feeling and weakness are constantly better in the morning, after the night's rest, and the symptoms again become more marked in the afternoon and evening.

Remarkable variations in the degree of weakness is also a very characteristic feature of the disease. Marked changes, for instance, may be noticed in the power of swallowing, chewing or speaking from day to day. Periods of remission and exacerbation, constituting even recurring attacks, are sometimes observed at intervals of weeks or months.

The myasthenic reaction is a very characteristic symptom. It is, however, by no means always present. It may be transitory and is more readily obtained when the muscle is exhausted. To apply the test a tetanizing faradic current is passed through the affected muscle, when the contraction becomes gradually feebler and eventually ceases to respond. To galvanism there is little or no diminution in the power of contraction after repeated passage of the current. The reaction of degeneration is never observed in cases of this category, and this fact gives us a valuable means of distinguishing the malady from organic bulbar paralysis.

The muscles preserve their nutrition and there is never any spasm. Sensation is unaffected and the sphincters are unimpaired. The reflexes also remain unaffected, although there is occasionally an increase in the knee jerk.

The course and duration of the disease vary considerably. Only seldom does it appear as an acute or subacute condition, proving fatal in a few weeks or months; much more commonly it extends over a period of from one to three years, and in rare instances it has lasted as much as ten years.

According to Campbell and Bramwell, twenty-three out of sixty cases terminated fatally. In the chronic form it is not steadily progressive, but there are frequent periods of remission or intermission of the symptoms. Death has resulted from attacks of dyspnœa due to involvement of the respiratory muscles. Sudden and fatal attacks of suffocation have set in as the result of passing a sound or on attempts to swallow.

The causes of the disease are obscure. Most cases occur between the ages of twenty and forty, whilst it is rare in children and over sixty. Oppenheim finds a slight preponderance in the female sex (3 to 2), and he remarks on the relative frequency of the affection in teachers. The malady has occasionally followed infections, and relapse has followed on such a slight infection as tonsillitis.

Pathological investigation has so far failed to reveal any special morbid changes in the nerve centres, nerves or affected muscles.

The following case was referred to me at the Montreal General Hospital by Dr. J. A. Hutchison.

Case 268, 1902. The patient, aet, 49, is an engine-driver, and being one of the smartest men on the road, is usually employed on a very fast run. He complains of difficulty in swallowing, weakness in the arms, legs and jaw, occasional regurgitation through the nose, and dribbling of saliva.

Up to the present illness he has always enjoyed good health. He had a scalp injury and a severe blow on the head eight or ten years ago in a railway accident, and from which he completely recovered. There is no history or evidence of syphilis, and he has always been very moderate in the use of alcohol.

Both parents lived to old age, two brothers died of lung disease, but all other members of the family are in good health.

His present illness began about September 1st, 1901, with weakness in the arms, followed shortly by weakness in the legs, and still later in the muscles of the jaw. Owing to this weakness he had to stop work, but has never taken to bed. Since the illness began the chief complaint has been of difficulty in swallowing, and liquids have been more readily swallowed than solids. Regurgitation of fluid through the nose occurs only occasionally and usually when swallowing rapidly. He has lost 60 lbs., which he attributes to the difficulty in taking sufficient nourishment. There has been a feeling of thickness in the tongue with thickness of speech, and saliva occasionally dribbles from the lips, a symptom which was noticed in the first month of his illness.

His symptoms are usually better in the morning and increase during the day, and they are subject to considerable variation in severity from time to time.

He has had several attacks of dizziness lasting half an hour at a time, and beginning in September last.

Examination. The patient is a man of 5 ft. 10 in., weighing 148 lbs. His memory and intelligence are normal. On admission he experienced much difficulty in swallowing, which disappeared the following day. A large sized œsophageal sound passes rapidly into the stomach.

Although complaining of weakness in the arms and legs the motor power is not diminished. The muscles are medium sized and rather flabby. He makes a poor attempt at whistling owing to weakness of the lips. The tongue is protruded very slightly to the right, and there is a very fine tremor occasionally present; the soft palate hangs rather lower than usual, especially on the right side, and Dr. H. D. Hamilton reports slight weakness of the adductors of the vocal cords, and more on the right than on the left side. There is at times difficulty in swallowing, and on one occasion fluid was noticed to regurgitate through the nose.

The pupils react to light and accommodation. Dr. J. J. Gardner reports that there are no changes in the fundus, and no error of refraction. There is no defect in the movements of the ocular muscles.

The knee jerks are slightly increased, and the plantar reflexes are normal.

The thoracic and abdominal viscera are normal, the radial arteries are slightly thickened.

During the sixteen days he remained in hospital the temperature was subnormal, varying from 95 1-5 to 98 1-5. The pulse ranged from 64 to 84.

Marked changes in the degree of weakness were noticed from day to day in the bulbar muscles. There was at times an almost entire absence of signs of weakness, and no difficulty in swallowing or thickness of speech would be experienced. On other occasions the speech became thick, and much difficulty in swallowing was experienced. The symptoms were less marked in the mornings than at later periods of the day.

No electrical changes were noticed with the faradic current. The muscles responded readily, and after repeated stimulation no diminution in their irritability was present.

The diagnosis of myasthenia or pseudo-bulbar paralysis was based on the weakness of the bulbar muscles, and on the marked variation of power which they exhibited from day to day, with improvement after the night's rest. This variation was particularly noticed in the power of swallowing. The early involvement of the jaw muscles was again very suggestive of this condition, as they are seldom involved in true bulbar palsy, and then only in the advanced stages of the disease.

The degree of weakness was slightly greater on the right than the left side, as shown by the slight protrusion of the tongue to this side, the greater drooping of the palate, and the lessened degree of adduction of the right vocal cord. Slight degrees of asymmetry often occur in the degree of paresis of the two sides, although I have not found any reported case in which the muscles of the tongue, soft palate and vocal cord were more affected on one side than the other. Ptosis is, however, frequently more marked on one or other side, and Gowers has recently reported a case in which the masseter and face muscles were weaker on the right than on the left side. (*Brit. Med. Journ.*, May 31, 1902.)

NOTE ON A RAPID BLOOD STAIN.

BY

F. M. Fry, B.A., M.D.

The blood stain I wish to draw your attention to is no new one, nor can I lay claim to sole ownership of it. It is one of the many modifications of Romanowsky's stain, which is a rapid means of permanently colouring blood films. Romanowsky's stain is, however, somewhat difficult of preparation and often proves unstable. Wright, of Harvard, is the last observer to modify this stain in order to increase its convenience of use and render it more permanent in keeping properties. He makes a half per cent. solution of sodium bicarbonate and to this adds one per cent. of methylene blue. This alkaline solution he steams for one hour in the Arnold sterilizer, thus imparting to it a polychromatic power. To 100 cc. of this solution, Wright adds 500 cc. of a 1 to 1,000 aqueous solution of eosine, thus rendering the solution a deep purple colour and producing a very fine precipitate. This precipitate is caught on a filter paper and when thoroughly dry, 3 grms. of it are added to 100 cc. of pure methylic alcohol making a saturated solution. This is once more filtered and to the filtrate is added 25 per cent. of methylic alcohol. This very dilute solution is the stain.

In preparing a blood film one merely exposes a coverslip to the air for a minute or less until dryness is complete and then adds several drops of the solution. This fixes the film. After the lapse of one minute several drops of distilled water are added until the solution becomes translucent and a yellow lustre appears on the surface. The staining proper now takes place. and after from two to five minutes the stain is washed off with distilled water until the thinner portions of the film appear salmon pink in colour. The film is now dried on blotting paper and in the air and immediately mounted in Canada balsam.

On examining the film one finds the red cells stained a rich orange or a yellow or yellowish pink, acording to the taste of the observer. The nuclei of the polymorphonuclear cells are stained a deep blue, their protoplasm appearing pinkish, the nuclei of the mononuclears are stained a blue or a deep lilac, reddish-purple colour, while in many places the cytoblast, especially in the large mononuclears and splenocytes, appears a beautiful robin's egg, bluish-green colour. The eosin granules

---

[*] Read before the Montreal Medico Chirurgical Society, May 2, 1902.

appear as deeply red in colour as they do in using other eosin solutions. Thus one has a stain at least as satisfactory as the older eosin and hæmatoxylin or the Ehrlich's triple stain, while the time required for fixing and hardening the film for these two stains is here reduced to three or four minutes instead of from several to twenty-four hours, as is ordinarily the case.

It is, then, on account of its rapidity of action and its applicability that I have thought it worth while to bring this stain to the notice of the Society. Furthermore, the stain brings out many varieties of granules in the mononuclear cells which are not ordinarily shown by the other stains. In order to find out whether these granules are normal and always present or pathological and of some diagnostic importance, I hope to make to you at some future date a further-report.

HOLE IN THE MACULA LUTEA.

BY

W. G. M. Byers, B.A., M.D.,
Assistant Ophthalmologist to the Royal Victoria Hospital.

The case presented to you this evening, somewhat in the way of an innovation, is a typical example of a condition which has been variously designated. It has been called traumatic perforation of the macula (Haab), rarefying or atrophic central retinitis (Kuhut), and hole in the macula (Ogilvy).

The patient, a boy of 16 years, was struck on the eyebrow, towards the root of the nose, three years ago, by a small pebble thrown by a younger school companion. Previous to this, patient is quite sure that his eye was normal in every respect, but after the blow, which was very slight, he noticed at breakfast the next morning that objects seemed to float in front of his eye. When looking up at the wall there appeared to be a bird or insect there, or something like these in shape, when in reality there was nothing present.

These optical illusions were especially noted for a day or two, and even now, from time to time, he sees in front of his right eye a small round black ball, not very dark, which follows the movements of the globe (positive scotoma). No subjective symptoms, such as flashes of light, were noticed at the time of the injury, nor was the eye red or sensitive to light, so far as he remembers.

With the ophthalmoscope no difficulty will be experienced in seeing in the macular area the rounded, distinctly depressed and sharply defined hole with its deep red base. The depth of the depression is demonstrated with greater difficulty by the direct method and by faint parallactic movements. It will be noted further that the macular depression is situated on a zone about half the size of the optic disc, of a slightly yellowish hue. Here and there are dots of organized exudate and over one or two, crystals of cholesterin. Vision of the right eye equals 6-60, not improved, and, contrary to what one might expect, the central vision for colours (three milimetres) is not lost.

Cases of this kind were first brought to my notice by Ogilvy, chief clinical assistant to Mr. Marcus Gunn, during my term of residence at Moorefield's eye hospital, but although constantly on the look out since my return to Canada, for this condition, the present is the first example to come to my notice.

The condition was first described by Noyes of New York before the American Ophthalmological Society in 1871. His communication was apparently entirely overlooked, and interest in the subject has only recently been revived. Valuable articles by Kuhut of Königsberg and Haab of Zurich appeared in February, 1900, and Ogilvy presented to the Ophthalmological Society in the United Kingdom in July of the same year a further series of fifteen cases.

A history of traumatism on or about eye is present in nearly every case, but in two instances reported by Kuhut, no history of injury was present, and the author was led to believe that some predisposition in addition to the injury was necessary to account for the changes. Still more recently, Quebi of Vienna, has described in the September number of *Zeitschrift für Augenheilkunde,* of 1901, cystic changes as the results of an inflammatory œdema, which were confined entirely to the macular region, in an eyeball lost from trauma. He thinks that in this case, although the evidence of preoperative examination was wanting, on account of opacity of refractive media, that the changes present must have presented an ophthalmoscopic picture similar to those already portrayed, and that possibly the pathological explanation of these cases is to be found in cystoid degeneration of the macular region.

ANGIO-NEUROTIC ŒDEMA.

BY

W. E. DEEKS, B.A., M.D.,

Lecturer in Medicine, University of Bishop's College, Montreal.

The patient, Miss C., aged 83 years, has been suffering from asthmatic attacks for many years at various intervals, and otherwise a good deal from urticaria but for some time has been comparatively immune from both. She has also a chronic cardiac affection, both valvular and myocarditic with enlargement and hypertrophy.

Some time previous to this attack she had been enjoying fairly good health but was taking about six grains of supra renal extract daily because of threatening cardiac œdema which appeared on cessation of the extract and disappeared on its resumption.

On the morning of May 15th a small whitish swelling was noticed beneath one eye and was very itchy, evidentially urticarial in nature, as it shortly afterwards disappeared and the patient was in her usual health until she began her dinner at nearly one o'clock. She became then dyspnœic with constant irritable coughing and swelling of the face, when I was summoned.

On my arrival the following condition was noticed. The whole face including the ears was cyanotic and swollen, the eyes prominent, fairly bulging, speech almost inarticulate from the œdematous tongue which could not be protruded. The parotid and submaxillary glands were engorged, forming four large rounded prominences which increased her facial distortion to a marked degree, and it was from them she suffered most pain.

The pulse was unaffected to any extent but stethoscopic examination showed a general pulmonary asthmatic condition with the attendant sybilant and sonorous rales. There was no febrile disturbance and no engorgement of any of the larger veins in the neck.

I was at a loss for a diagnosis and thought at first of sudden thrombosis of the deep jugular veins associated with the cardiac affection. Thinking the patient *in extremis* I summoned another physician who looked upon the condition as very grave but not as absolutely hopeless, but who like myself was at a loss to give it a name. A hypodermic of morphine with atropine was decided upon to relieve the distressing condition of suffering and with the hope of relieving also any spasm which might be a factor in its causation. To our great satisfaction the patient experienced almost immediate relief, the cyanosis began to disappear and in two hours the patient was quite comfortable except for her tongue and lips which were greatly swollen and which did not return to the normal for twenty-four hours. The asthma disappeared simultaneously.

The case is of interest because of its comparative rarity, of its locality, of its association with asthma and possibly urticaria (from which for some time previously the patient has suffered), of its extreme gravity and of the prompt relief attending the use of morphine with atropine. Undoubtedly it was a vasomotor neurosis of unknown origin as there seemed to be no previous dietetic error and no general constitutional disturbance febrile or otherwise.

It could not have been connected with the administration of suprarenal extract as the patient had taken it before in very much larger doses, and has taken it since without recurrence of the attack.

ADDISON'S DISEASE CURED BY SUPRARENAL EXTRACT.

BY

W. E. DEEKS, B.A., M.D.,

Lecturer in Medicine, University of Bishop's College, Montreal.

The patient, Mrs. W., aged 32 years, was admitted to the hospital, April 3rd, complaining of pain in the stomach, back and head, vomiting, diarrhœa, weakness and loss of appetite.

Her illness began in November 1901, with weakness, loss of appetite and diarrhœa, but she was able to continue about her usual household duties until January of this year when she was confined to bed. At this time the most aggravating symptoms were the diarrhœa, pain in the back and head and insomnia. About this time also she noticed her skin becoming abnormally brown. These symptoms gradually became worse up to her admission on April 3rd.

Her previous history is negative except for an attack of malaria seven years ago. She is married and has six healthy children.

Her father is alive aged 80 years, her mother, three sisters and one brother died of consumption. Two brothers aged 25 and 30 years are alive and well.

On her admission, April 3rd, the following condition was noted. Pulse 110, weak, small and compressible. Respirations 24, temperature 102°F. She was exceedingly weak and suffered from breathlessness, dizziness, headache, and palpitation. She manifested great lassitude and loss of physical and mental energy. It appeared a great effort to reply to ordinary questions, her speech was slow and incoherent. The most striking feature about her condition was the pigmentation which was universal, but deeper on those parts where pigment normally is present, on the exposed parts where the clothing bore most heavily as the neck, hips, shoulders. Pigment spots were also present on the mucous membranes of the lips and cheeks. Her extremities were cold and clammy and she fainted on the slightest exertion. Anorexia, nausea, and vomiting were present. The stools were liquid in character and from two to as many as nine daily. The tongue was dry, coated and very pale. Dull aching pains were referred to the epigastric, hypochondriac and lumbar regions. Examination of the lungs revealed in the right apex and along the antero internal edge of the lung slight dulness on percussion with a few dry crackling rales. There was slight cough and very little sputum in which no tubercle were found.

The blood examination showed 32 per cent. of hæmoglobin, 2,100,000 erythrocytes, with marked poikylocytosis and a relative leucocytosis. The average daily amount of urine was 30 ounces containing two-tenths per cent. of albumin and 6½ grains of urea to the ounce. No casts were present.

The patient was put on liquid diet and one-thirtieth of a grain of strychnine was ordered to be given hypodermically three times daily, and bismuth with cocaine was given to allay vomiting but without result. Hæmaboloids, drachms two, were ordered three times daily, after meals, and codeine one-eighth of a grain every four hours to control the cough. This method of treatment was continued to May 5th without any betterment, but on the contrary a gradual sinking of the patient's vitality when on consultation it was decided to try suprarenal extract three grains three times daily after meals. Improvement began immediately and within three days the vomiting and diarrhœa began to lessen and the patient to gain strength and to feel better. From this on the patient steadily improved and in two weeks from the beginning of the surprarenal extract treatment she was feeling very comfortable and enjoying her meals. On May 29th, the blood was again examined and gave 40 per cent. of hæmoglobin, 3,850,000 red cells, and a very great improvement in their appearance. The urine was also free from albumin.

On the 22nd of May she sat up for two hours and on the 25th most of the day. On the 31st she was able to leave the hospital feeling very well and with the pigmentation fast disappearing. The extract was continued at home and she reported at the hospital at intervals of two weeks, when she left for the country feeling well.

CLINICAL NOTES.

BY

Geo. T. Ross, M.D., D.C.L.,

Fellow American Laryngological, Rhinological and Otological Society, Laryngologist to Western Hospital, etc.

Aortic Aneurism with Latent Symptoms.

A. B. aged 56, a man of robust physical development, first complained of dyspnœa in January, 1900. There was a history of lues some 18 years previously, but without either secondary or tertiary sequelæ. For the past 25 years he lived very freely and consumed on an average more than a pint of alcoholic drinks daily ; was a very active and assiduous worker in his business which necessitated much travelling in the railroad cars. He was unmarried. After a winter trip when the weather was particularly bad, he returned home with a troublesome cough. On climbing the stairs of the railway station exit, he was attacked with dyspnœa to such an extent as to call for assistance to get into a cab. This was the first occasion of severe restricted breathing and suffocative attacks from which he subsequently suffered at short intervals until his death, one year and a half later. These attacks lasted from five minutes to half an hour, sometimes though rarely longer, and the patient said that when they were severe he had a sense of impending death. Great cyanosis of face, neck and anterior portion of chest occurred with orthopnœa and great anxiety. Superficial veins in the head were distended and pulsated visibly. Heart beats 130, respirations 24 to 30 per minute, inspiration was harsh and stridulous while expiration was difficult and called on all the expiratory muscles forcing the air out in a jerky manner. Slight exertion, emotion or sudden effort would precipitate these attacks. The physical signs when free from suffering, were the following :—No perceptible pulsation or enlargement over the thoracic region, or other change from the normal on inspection. No impluse or thrill to be felt on palpation above the cardiac area, while the heart beat was felt to be weak even on deep pressure. Some slight tugging of the trachea noticeable. Radial pulses were fairly equal. On percussion an area of dullness was found extending from the lower margin of second rib on left side down to and continuous with the cardiac dullness. This area extended for an inch to the right of sternum. No bruit, thrill or murmur was heard on auscultation over the front of chest, while the heart sounds were weak with some accentuation of the second sound. Examined posteriorly the chest signs were negative. In the larynx there was neither paralysis nor paresis, or other divergence from the normal function. No bulging into the trachea could be made out, or any impulse perceptible there. No angina pectoris or pain referred to any region. Considerable bronchial cough existed throughout the course of the disease with free expectoration. In the latter months of life it was tinged with blood. The treatment was mainly symptomatic, and the only measure that gave definite relief was when the median basilic vein was opened and seventeen ounces of blood was extracted. After the vessels filled up again this was repeated, but the same marked relief was not experienced.

At the autopsy the heart was found fatty and hypertrophied. Cardiac muscle friable and infiltrated with fibrous tissue. Nothing special regarding the valves. The aorta was dilated immediately above its origin to the transverse arch forming an aneurismal dilatation. On the upper and anterior part of the transverse arch of the aorta was a large aneurism, about 2½ inches in height by 2 inches in breadth, with a slight constriction at its upper part. It was almost completely filled with organized clot. From this aneurism a right subclavian and a right common carotid were given off. The aneurismal dilatation of the ascending part of the arch and the aneurism of the transverse part of the arch presented the picture of almost two distinct aneurisms. There was marked atheroma of the aorta. The trachea was pressed on anteriorly and to the right side of the aneurism, the lumen of the former being diminished to less than one half the normal size. The pressure was about two inches above the bifurcation of the trachea. Some slight pressure was exerted on the œsophagus indirectly.

This patient had been under the care of many physicians in New York, Chicago and Montreal and received a most remarkable variety of opinions regarding the nature of his disease, and he suffered many things superadded to the disease at the hands of these physicians in consequence of mistaken diagnoses. While it was true that many of the classical symptoms of aortic aneurism were latent, yet the positive evidence of extensive dullness over the aortic area, tracheal tugging, suffocative spasms, due apparently to pressure, and that pressure intermittent and relieved by lowering arterial tension, and finally reasoning by analogy and exclusion, made aneurism the reasonable cause of the suffering. One physician, attached to the large hotel where the patient was temporarily located, decided after mature thought that he had a case of spinal caries, and clapped a plaster of Paris bandage round the sufferer's neck to hold his head fixed. I heard later that this man gave himself credit for having saved the patient's life, owing to temporary subsidence of the spasms of dyspnœa. Other physicians were guarded and avoided a positive opinion, while two or three only arrived at a correct diagnosis.

This case is an instructive one, owing to the fact that a large aortic aneurism existed without affecting the action or mobility of the larynx, or giving other laryngeal indication of its presence, and also that its existence was overlooked by many competent men owing to the suppression of typical chest signs. The organized clot obliterating the sac with exception of space for the blood current would account for the latest symptoms, while the condition of the recurrent laryngeal nerve, being as it were pushed aside from the maximum distension of the tumor would help to account for lack of laryngeal indications. On looking up the literature of this subject I have been surprised to find how little the condition described is alluded to in standard works.

Polypoid Excrescence of Tonsils.

G. E. T., aged 24, came in April, 1901, complaining of difficulty in swallowing. He was a well nourished man, rather pale but active, and said he felt well with exception of the trouble referred to. Throat examination showed both tonsils somewhat hypertrophied. From the upper and lateral part of the left tonsil there sprung an elongated mobile structure, having a worm-like appearance. It was smooth, soft and insensitive to touch, with a greyish color. It projected from the tonsil forming a kind of horseshoe curve, an inch in length by a quarter of an inch in diameter, the tip resting on the upper surface of the tongue and giving the sensation of discomfort for which relief was sought. It was removed by cutting and bringing away with it a portion of the tonsil, the result being quite satisfactory.

Microscopic examination showed the structure to be covered by squamous epithelium, having cylindrical cells in the deep layers, and thus it was similar in structure to tonsillar tissue. The bulk of growth proved to be lymphoid tissue.

Hajek says some masses of polypoid enlargement take their origin from the strangulation of a portion of adenoid tissue, while other enlargements are an elongation of the point of insertion of an accessory tonsil. There would appear to be no reason why at any point in the ring of Waldeyer the lymphoid elements should not take on an unusually large development and if such excess of growth occurs at a point where the action of muscular structures would tend to stretch it, the mode of polypoid formation is easily understood. Its unfrequent occurrence in the tonsil in this shape induced me to report it.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Albuminous Expectoration.

David Riesman, M.D. "Albuminous Expectoration following Thoracocentesis." *American Journal of the Med. Sciences,* April, 1902.

The writer alludes to the rarity of this complication of thoracocentesis, which was first described by Pinault in 1853. Terrillon, in 1873, reviewed the literature and collected twenty-one observations with two fatalties. Pepper, in 1874, recorded the first case in America. Riesman states that he has found only three cases in German literature. In England, Fraser briefly reported an instance in 1876, and Gee gave a full description of a case in 1886. Following the short historical notice is an account of the case that occurred in the practice of the writer in 1901. There was an extensive right-sided pleurisy with effusion, due to a sarcomatous growth in the anterior mediastinum. A first aspiration of the pleural effusion, amounting to three pints, was followed by distressing cough and the expectoration of "about five ounces of a turbid, amber-coloured fluid, covered with a layer of froth half as thick as the fluid itself, containing a few streaks of blood and some flocculi." A second and a third aspiration performed subsequently at varying intervals, though followed by severe spasmodic coughing, did not give rise to albuminous expectoration.

The distressing symptoms accompanying albuminous expectoration usually occur not immediately after the tapping, but after an interval varying from a few minutes to half an hour, sometimes longer. They are cough, and dyspnœa gradually becoming more intense, and with the rapidly increasing and sometimes profuse expectoration, there is cyanosis and clamminess of the skin, and a weak and rapid pulse. Over the affected lung there are numerous fine and coarse moist râles. The quantity of fluid expectorated varies greatly, from a few ounces to a quart or more. The symptoms, in case of a favourable issue, subside as a rule in one or two hours, but may be much prolonged. Analyses of the fluid expectorated vary much in different cases. In Riesman's case the fluid was gelatinous like white of egg, sp. gr., 1018, neutral, and gave a positive biuret test. The albumin amounted to 3.5 grammes, and the total solids were 5.84 per cent. Acetic acid gave a precipitate (mucin). Urea, hæmoglobin and sometimes urobilin are found. The fluid as a rule resembles that removed by aspiration. In the majority of instances albuminous expectoration has followed the rapid withdrawal of unusually large amounts of serum from the pleural sacs.

The writer then enumerates and discusses seriatim the various theories that have been advanced to explain the phenomenon. These are:—(1) Perforation of the lung by the instrument used. (2) Spontaneous rupture of the lung. (3) Absorption by the lung of fluid remaining after the tapping. (4) Pulmonary congestion with intense œdema.

The conclusions of the writer are as follows:—

(1) Albuminous expectoration is a very rare complication of thoraco-centesis. It is usually serious and sometimes fatal.

(2) It consists in the expectoration of viscid albuminous fluid closely resembling the fluid of serous effusion.

(3) The condition is best explained on the basis of an intense congestion and œdema of the lungs (congestion by recoil).

(4) The principal causes seem to be either too rapid or too great a withdrawal of fluid.

(5) Serious cardiac disease and morbid conditions of the opposite lung, hindering expansion, are predisposing causes.

(6) Under all circumstances, but particularly when these complications exist, aspiration should be performed slowly. If the effusion is large the amount withdrawn at any one time should be moderate.

(7) In some cases it may be wise to perform several tappings, drawing off a small quantity each time.

(8) The treatment consists in counter irritation, venesection, and artificial respiration, together with the use of morphine if the cough is severe.

[It is probable that albuminous expectoration is not so excessively rare as the writer thinks. H. B. Cushing recently reported a number of cases at the a meeting of the Montreal Medico-Chirurgical Society and the reviewer has quite recently seen a typical case.]

Pharmacology.

UNDER THE CHARGE OF A. D. BLACKADER.

On the Uses and Abuses of Arsenic.

ON THE USES AND ABUSES OF ARSENIC. H. D. ROLLESTON, M.D., F.R.C.P. *Treatment, April, 1901.*

Arsenic is one of the remedies that probably most of us would retain if the Pharmacopœia was reduced to a dozen drugs. It often acts with unexpected brilliancy and in a way that is not always easy to explain on scientific grounds. For the curious condition known as geographical tongue, arsenic may frequently be of much service. As an appetizer or 'pick-me-up' a dose before meals of a minim of Fowler's solution with gr. x. of sodium bicarbonate and gentian, is a useful and popular prescription. It is also strongly recommended in small doses in other forms of dyspepsia and especially in irritative dyspepsia and alcoholic vomiting. In the annoying form of morning diarrhœa where a large evacuation is passed shortly after breakfast, a minim of Fowler's solution before breakfast frequently acts like a charm. It is also of service in mucous colitis, that troublesome form of disease manifesting itself by the passage of casts of the bowel formed of coagulated mucus. In blood diseases such as pernicious anæmia, splenic anæmia and leukæmia, arsenic is in common use and probably does more good than anything else. It is an interesting problem as to how it affects this good. From the experiments of Stockman and Greig it would appear that it may act by stimulating the red marrow of bone and thus increasing the output of the red blood corpuscles. But if it acts thus it does not necessarily touch the real cause of the disease, and its employment must be regarded therefore as purely symptomatic treatment. On the other hand it may act as an antidote and disinfectant antagonising or destroying the cause of the disease. In this connection it is interesting to note that Weiner states that experiments would indicate that the blood serum of animals treated with increasing doses of arsenic becomes able to protect other animals against infection with the colon and typhoid bacilli.

The local application of arsenical paste as an escharotic has long been known and has recently been revived by orthodox practitioners for inoperable cases of carcinoma, a mixture of arsenic one part and diluted alcohol from 50 to 150 parts is painted over the surface of the growth. Petrini reports cases where cutaneous sarcomata have disappeared under this treatment, but in which a fatal result afterwards ensued owing to the internal growths.

It has been observed that toxic symptoms arising during the medicinal administration of thyroid gland extract may be held in check by small doses of arsenic. On the theory that the symptoms of exophthalmic goitre are due to an excessive and probably abnormal secretion of the thyroid gland, benefit may be obtained, it seems reasonable to suppose in this disease from the administration of small doses of arsenic. Rolleston reports a case in which the patient improved wonderfully at first but afterwards relapsed.

How does arsenic benefit cases of chorea ? Is it by so interfering with nerve of conduction that the patient is unable to manifest the original disease ? This seems unlikely, as in ordinary practice the toxic effects of the drug are hardly likely to be developed from the doses administered. On the other hand it may be urged that arsenic is less successful in ordinary practice than in the hands of the successful quack who told Murray, of Newcastle, that the great success of his medicine was due to the large amount of arsenic it contained (15 to 20 minims in each dose).

Arsenic is recommended on empirical grounds by Dr. Murray for employment in diabetes, after the disease has been modified by diet and codeia. Murray gives 10 minims of the Liquor Arsenici Hydrochloricus three times a day combining it with hydrochloric acid and strychnine, and states that most lasting cures have been obtained in this way. It may be that it has a beneficial action by inhibiting the glycogenic function of the liver.

As to the administration of arsenic it is hardly necessary to state that in most cases it should be given after food; sometimes, however, given with all care it disturbs the stomach. It may then be given hypodermically, injected into the substance of muscles rather than into the subcutaneous tissue ; large doses can thus be borne without any bad effects. In a case that Rolleston saw in consultation where small doses given by the mouth produced gastro-intestinal trouble, hypodermic injections of a solution of sodium arsenate 1 in 500 associated with a small amount of eucaine acted so satisfactorily that 105 grains were given practically without toxic effects in 271 days. Strict antiseptic precautions are of course necessary and Rolleston states that less irritation results if solution is injected at blood heat. Sodium cacodylate Rolleston regards as less powerful for good or evil, than ordinary arsenic.

When prescribing drugs that have a powerful action on the system, it is important to be on the alert to detest any evidence of the toxic action of the remedy. In the mouth arsenic in excessive doses may give rise to a silvery appearance due to a proliferation of the epithelium a process analogous to that of keratosis. Ptyalism and gingivitis are also said to occur. from excessive stimulation of the buccal mucous membrane ; loss of appetite, gastric pain, nausea and vomiting are well recognized indications of a toxic action; diarrhœa may be the result of a gastro-enteritis. On the respiratory tract arsenic has comparatively few bad effects. Coryza it is true is frequent but very marked changes in the mucous membrane are seldom noticed. Very infrequently tracheitis and bronchitis may be set up by its action; spontaneous hæmorrhages have been attributed to its employment. Arsenic may also give rise to cardiac failure. In the recent epidemic of arsenical poisoning alcohol was the medium by which arsenic got into the system and in this case the effects produced may have been due to the two poisons but there seems no reason to doubt that arsenic alone may be the cause of cardiac failure. It has long been known that arsenic induces fatty degeneration of internal organs and probably it is in this way that cardiac failure is brought about. Degeneration of the peripheral nerves is a well known result from medicinal uses of arsenic. It is remarkable that although arsenic may be given freely and for long periods in skin diseases and in leukæmia without any development of this action, yet in chorea by no means large doses may produce severe paraplegia. Railton reports the development of paralysis in children who had not had more than 4 grains, and states that in one instance the first sign of the paralysis did not develop until two weeks after the medicine had been stopped. This interval is of interest in connection with the fact that the urine may contain arsenic a fortnight after its ingestion has been stopped.

If a patient is simultaneously exposed to the influence of other toxic agents such as alcohol, or the poisons produced by disease, its toxic effects may be more readily induced. In the recent epidemic due to arsenical beer the numerous cases of peripheral neuritis may have been due to the combined toxic effect of the two poisons or to the possible action of a third poison, selenious acid. Examples of an arsenical neuritis, apparently precipitated by a tonsillitis and by an attack of influenza have been recently recorded, and the liability of the arsenical treatment of chorea to be followed by a peripheral neuritis may be due to an associated action on the affected nerves by the toxines of acute rheumatism.

Arsenic in certain persons leads to pigmentation of the skin. This may occur in acute poisoning but is more frequently seen after long continued treatment. The pigmentation begins with brown spots which enlarge and coalesce ; It resembles the pigmentation of Addison's disease in that the parts of the body that normally show pigment are the ones chiefly affected but differs from it in the fact that the exposed parts of the body are not much affected. The differential diagnosis, however, may be difficult since in arsenical pigmentation the visible mucous membranes may, although rarely, be affected. The occurrence of pigmentation apparently depends on the amount of pigment in the skin. Reynolds states that in an epidemic of peripheral neuritis pigmentation did not occur in fair complexions or only to a very slight degree. As to the prognosis of arsenical pigmentation it is stated that it usually disappears a few weeks or months after the treatment has been suspended, but it has been known to last for years.

Long continued courses of arsenic may lead to thickening of the skin, especially over the hands and feet. This may present itself as a diffuse thickening or as localised corns or scattered horny growths. This thickening has been attributed by some pharmacologists to the arsenic excreted by the glands acting locally and directly on the epidermis; by others the condition is regarded as a tropho-neurosis. The keratosis usually subsides on the withdrawal of the arsenic but it may require local treatment. Arsenic acts almost entirely on the epithelial parts of the body both in doing good and in producing bad results, and thus presents a contrast to iodides and salicylates which have a more direct effect on the connective tissues.

On the Action of Urotropine.

This new synthetic drug has during the last three years risen into considerable importance as an efficient urinary disinfectant. It is to be regretted that its cost for the present is so high.

Gotze and Gottlieb.—(*Prager Medicinische Wochenschrift, August 1st, 1901*) report a series of investigations on the properties of this drug and state that they have found it to act *in vitro* as a powerful antiseptic in a 5 per cent. solution, rapidly killing the micro-organisms met with in cases of ammōniacal urine resulting from cystitis. It was also found to be destructive to the bacillus coli and bacillus typhosus. In weaker solution the development of these organisms was greatly checked, and when added in small amount to normal urine, at ordinary temperatures it postponed ammoniacal decomposition for eleven days. When the temperature is raised, its antiseptic powers are much increased, so that a 1 per cent. solution at 37°C. is as effective as a 2 per sent. solution at 17°C. The presence of albumen did not appear to interfere with its antiseptic action.

F. Suter in the *Lancet* of February 23rd, 1901, compared the antiseptic action of the following medicines administered in a case of cystitis at night :—Benzoic 10 gr., Boracic acid 15 gr., Salol 15 gr. and 45 gr., and Urotropine 15 gr., and found that the development of decomposition was retarded only by the strong doses of salol and by the urotropine.

Cammidge has also investigated the action of this drug on normal urine. For this purpose a healthy adult male was selected and the daily output of urine collected and measured for three weeks. Examination was made each day of the urea, uric acid, chlorides, phosphates and sulphates; the specific gravity, reaction and number of acts of micturition were also noted. The results obtained in the first and third weeks, during which no medicine was taken, were compared with those of the second week during which 10. gr. of urotropine, dissolved in an ounce of water, were taken three times a day. Cammidge states that he found the drug had no distinct diuretic action, nor did its administration lead to any appreciable change in the chemical constituents of the urine. Urotropine was found in the urine 10 minutes after the first dose was taken and continued to be excreted in small quantities for 26 hours after the administration had been discontinued. A curious effect produced by the drug was a sensation of formication which appeared on the fourth day and became most intense that night; it increased each day till on the 6th day a diffuse red rash resembling measles appeared. Both rash and irritation quickly subsided after the urotropine was discontinued.

Occasionally urotropine gives rise to blood and epithelial cells in the urine. Nicolaer records a case in which 90 grs. in the course of 24 hours induced this symptom, W. Langdon Brown reports two cases in which hæmaturia followed the administration to a typhoid fever patient of ten grains of urotropine three times daily. The hæmorrhage occurred in both cases upon the eighth day of urotropine medication, but in these cases was thought to have originated in the bladder. Dr. Brown thinks that the discomfort in micturition which precedes the hæmaturia should be a danger signal in such cases.

All investigators are agreed that much of the urotropine taken by the mouth passes unchanged through the kidneys, but it is uncertain whether the antiseptic properties of the urine are due to the drug itself or to some decomposition product arising from it. By many it has been supposed to be due to the liberation of formaldehyde, but it is now evident, both from chemical and bacteriological evidences, that this is not so. It would appear, however, that decomposition of urotropine with liberation of an antiseptic product takes place more readily when the urine is distinctly acid and that in order to secure the full effect of urotropine, it is important to maintain the acidity of the urine as it leaves the kidney.

This does not, however, prevent its having an excellent effect in many cases of cystitis in which the urine though acid as it leaves the kidney becomes alkaline from the ammoniacal decomposition which takes place in the bladder. In suppurative pyelitis a similar condition of the urine obtains and good effects follow its employment.

Dreschfeld, writing in the *Lancet,* states that he has obtained satisfactory results from this drug in cases of cystitis arising from various causes. He also found it useful in pyelitis, four out of six cases in which he employed it doing well. The two unfavorable results occurred in tuberculous patients. As a solvent for uric acid its value is doubtful.

Reginald Harrison thinks that urotropine is of little service in the treatment of urethritis, as it seems to have lost its power by the time it reaches the urethra. The most striking manifestation of its therapeutic power occurs in cases of phosphaturia, in which the urine is full of pus and triple phosphates and is ammoniacal. In some of the more severe cases the drug may not be potent enough of itself to effect complete disinfection, but in such cases, as an adjunct to properly performed bladder lavage, it is extremely valuable. The best mode of administration is to give the drug in doses of from 5 to 10 gr. three times a day in powder form or in cachêt, and direct it taken with a drink of water. It would appear probable that a few grains of salicylic or benzoic acid added to each dose, by maintaining the acidity of the urine, may, favor its action.

Thiosinamine ; Its Pharmacology and Therapeutic Uses.

THIOSINAMINE: ITS PHARMACOLOGY AND THERAPEUTIC USES. W. J. ROBINSON, Ph.G., M.D.

Thiosinamine is prepared from oil of mustard and alcohol. It appears in the form of colorless crystals of a bitter taste and slight garlic-like odor. It is but moderately soluble in water, very soluble in alcohol and ether. It may be administered by the mouth in doses of from gr. ½ to gr. iii. or hypodermically in the form of a 10 to 15 per cent. alcoholic solution. The injections may be given once, twice or three times a week and may preferably be made either in the interscapular or gluteal regions. They are painful but not excessively so.

Recently Unna has recommended the application of thiosinamine in various dermatological conditions in the form of a soap or plaster.

The credit of the introduction of the drug belongs to Van Hebra who reported his experiments in the treatment of lupus and old cicatrisations. He injected the drug subcutaneously in the neighbourhood of the nodules and obtained a favorable local reaction without in any way interfering with the organism in general. In chronic granular swellings, not syphilitic, he also obtained very good results causing diminution or entire disappearance of the swellings. In the following year he called attention to the systemic action of the drug pointing out that it exercised its effective action on lowly organised tissue.

Since then it has been employed by many observers. The literature may be summarised as follows:—

1. The beneficial effects of thiosinamine in cicatrices, chronic glandular enlargements, keloid and lupus are undoubted.

2. It appears to possess a beneficial influence in corneal opacities and in deafness due to sclerosis and adhesions, but further testimony is needed in this direction.

3. Taking into consideration the softening and resorbent effects of the drug it seems rational to believe that it would produce good effects in such conditions as hypertrophy of tonsils, hypertrophied turbinates and in various hypertrophies of the skin. A cautious trial of the drug in the above conditions seems desirable.

4. It appears that when used locally, applied to or injected directly into the lesion, it produces a stronger and more prompt impression than when administered internally.

A. D. Blackader.

Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

The Treatment of Summer Diarrhœa in Children.

THE TREATMENT OF SUMMER DIARRHŒA IN CHILDREN. By CHARLES GILMOUR KERLEY, M.D. *Archives of Pediatrics, June, 1902.*

Various classifications of this affection have been attempted by different observers. Some would classify during life according to supposed lesions which can only be learnt at autopsy; others would classify according to the active manifestations of the disease, which are rarely the same two days in succession, and others from the nature of the stools which may change several times a day. Obviously an accurate classification is difficult. A disorder so variable in its manifestations and uncertain in the lesions produced, is best designated for all clinical purpose by comprehensive although unscientific term such as infantile or summer diarrhœa. It is to be noted that in all cases in the beginning of an attack the contents of the intestine only are involved and not the intestinal structure; when serious symptoms appear and lesions develop they are due to the processes taking place within the intestine.

Realizing that we have an infection to deal with and a poisoned child to treat, the way is clear. We must promptly remove as much of the intestinal contents as is possible by the use of active laxatives, and for this purpose every case, whether mild or severe, should be given either castor oil or calomel as soon as it comes under observation. Castor oil is preferred, and for a child eighteen months of age two teaspoonfuls should be given. If vomiting is present, calomel in doses of 1-20th to 1-10th grain should be given every fifteen minutes till one grain has been taken. The indications for repeating this dose either of castor oil or calomel, are infrequent stools and high temperature.

It is among children under two years of age that by far the greatest number of cases of diarrhœa occur. The diet of children at this period of life is chiefly milk ; breast milk, condensed milk, raw milk, sterilized milk or grocery milk. Regardless of the source of the milk or its character, it must be stopped at once for the reason that it supplies a most favorable putrefactive medium for the development of the pathogenic bacteria to which the illness is due. It is of little service to merely reduce the strength of the milk mixture; neither pasteurization nor sterilization, when an attack has commenced, has the slightest beneficial effect. Cases of diarrhœa in infants fed at the breast are infrequent and are not as a rule severe ; in them complete abstention from nursing for from 24 to 48 hours is all that is required. Cow's milk is more liable to create trouble and must be discontinued for a longer period, from 2 to 3 days to 2 to 3 weeks. As a substitute diet carbohydrates in the form of cereal gruels has given the writer the best results, as it appears to furnish a fermentative instead of a putrefactive medium in which bacteria do not readily thrive. For a child one year old, one tablespoonful of Robinson's barley flour, or an equal quantity of whole rice is required for each pint of water. The barley flour should be boiled half an hour, the rice three hours. For older children when this cereal must be continued for a considerable time, it may be made two or three times this strength and dextrinized. Children soon tire of any one milk substitute if it is used as the only article of diet. For this reason it is advisable to change the taste of the carbohydrate substitute by the use of a small amount of chicken, mutton or beef broth: and occasionally of beef juice. Both the beef juice and the broths, however, must be used sparingly and only with the view of making the cereal more palatable.

Dr. Kerley considers that the free use of brandy and whiskey, as practiced by many physicians, is a mistake; in large doses they have a tendency to irritate and destroy what digestive power the child may possess: they may also induce renal complications. Egg albumin water he uses sparingly as he thinks that many children fail to digest it, and in that case it may do as much damage as milk. (This is opposed to the experience of other pediatrists—A. D. B.).

If the infant will take these gruels willingly and retain them, they may be given at two-hour intervals in such quantity as it was accustomed to take of milk in health. Boiled water is to be given at frequent intervals. Milk diet is not to be resumed until the temperature has fallen and the stools approximate the normal. It must then be begun very gradually ; Kerley recommends that at the first from one to four drachms only should be given with each feeding of the barley water. If no disturbance arises a slight increase may be made every or every other day.

If there is fever, he directs that cold water spongings for 15 minutes be given to the infant several times a day.

In reference to drugs, Kerley states that after an extensive use of many that have been advocated from time to time as valuable in summer diarrhœa, bismuth subnitrate is the only one that has proved of signal service in his experience, and this only when given in large doses. Kerley prescribes it in from 10 to 20 gr. doses every hour or two hours, but thinks that it proves of most service when sulphide of bismuth is formed in the intestine as shewn by black-colored stools. Opium is also of service, but it must be used with caution. He employs it only when the stools are frequent, eight or more in the 24 hours, and are large and watery. Opium, in his opinion, should never be given when there are only four or five medium sized passages in the 24 hours; this amount is necessary, so long as fermentation exists, to maintain drainage. If a heart stimulant is required, he employs either strychnine or strophanthus.

Irrigation of the colon is, in Dr. Kerley's opinion of much service in those cases in which the stools are infrequent and contain much mucus and blood. When the passages are frequent, irrigation effects little beyond disturbing the child and increasing the irritability of the lower bowel. Kerley uses generally normal saline solution . (In some cases a weak solution of tannic acid ʒss–ʒj to the Oj will be found of much service—A. D. B.). The irrigation may conveniently be given by means of a fountain syringe which should not be held higher than three feet above the child, and a small rectal tube. From 1 to 2 quarts of the saline are employed generally at blood heat; but when the patient's temperature is much raised an irrigation of salt solution at 70° will act as an antipyretic, and reduce the temperature from two to three degrees. In cases of extreme prostration and low temperature, an irrigation of salt solution at 110° acts as a decided stimulant. Not the least of the beneficial effects of this irrigation depends upon the absorption of a certain amount of the solution from the intestine into the general circulation supplying fluid which many of these cases are badly in need of, especially if there has been considerable vomiting and many watery stools.

In conclusion Kerley, emphasizes the necessity of taking prompt measures in every gastro-intestinal derangement in a young infant during the hot months, and expresses the opinion that as soon as the necessity for discontinuing the administration of milk in every case of diarrhœa until the child is well, is generally appreciated and practiced, then, and not till then, will the large infant mortality from summer diarrhœa be materially reduced.

On the Treatment of Syphilis.

ON THE TREATMENT OF SYPHILIS. P. McDOUGALL, *Medical Chronicle, March, 1902.*

The much debated question whether general mercurial treatment should be begun before the appearance of the roseola, was answered by Heuss with a decided negative, and Jadassohn agrees with him to the extent that specific treatment should not be begun for a suspicious ulcer until the diagnosis of syphilis is certain (excepting in the case of severe phagadenic ulcers), for, if syphilitic lesions remain absent after treatment, one is uncertain whether he has dealt with syphilis or not, and that is even worse than the certainty of the disease. Jadassohn admits the difficulty of diagnosis in many cases, especially for the less experienced. He also admits that little harm is done by waiting for the roseola ; " better wait in all cases," he says, " than treat one of uncertain diagnosis too soon." Nevertheless he upholds early treatment in every case in which a diagnosis can be made, and refutes the statement that the diagnosis of syphilis is never certain before the roseola, and that in treating it thus early we use our powder at the wrong time, and thereby render the course of the disease irregular and unfavorable. Jadassohn also believes that syphilis can be prevented in many cases by destruction of the virus at the point of entry immediately after inoculation, and is also of the opinion that wide excision, even of a commencing syphilitic chancre may in some cases abort the disease. He reports the details of three successful cases of such excision from his own practice, in each of which the diagnosis was verified histologically. To attempt to abort the disease, however, when the large lymphatic vessels and lymph glands are affected is useless. Excision should be wide and deep in healthy tissue and be preceded by cautery, by heat, or by pure carbolic acid to prevent any infection of the wound.

An important point in the treatment of syphilitics is whether the exhibition of mercury should be pushed repeatedly during the first years after infection, even when no symptoms are present. Jadassohn answers this in the affirmative. He advocates the prolonged intermittent treatment as opposed to the merely symptomatic. The object, he says, of the physician should be not only to relieve symptoms but to remove the materies morbi, and to prevent the transmission of the disease to the offspring and the development of tertiary and so-called parasyphilitic troubles. To attain these objects mild symptomatic treatment is inefficient. He maintains that the syphilitic virus is attacked by mercury in the latent periods as well as when symptoms are present and that the more prolonged course gives rise to no ill effects.

In a case of average severity and normal course, he would give in the first year, one energetic course of mercury followed by two moderate courses; in the second year, one energetic and one or perhaps two mild courses; in the third year, two courses, stronger or weaker as the disease requires, and finally, if there are any symptoms after the end of the third year, a course in the fourth year. As regards the method of exhibiting the mercury, he declares his preference for inunctions and for hypodermic injections of the insoluble salts of mercury. Since 1888 he has used salicylate of mercury suspended in liquid paraffin, 1-10, as an emulsion. He begins with small doses, from ¼ to ½ ccm. and avoids any danger of embolism by aspirating before injection to see if blood comes. If so, he goes deeper or less deep as he may think best. He calls special attention to the importance of mercurial treatment even for tertiary symptoms. Most of the various tertiary symptoms react as well to mercury as they do to iodide, and one sometimes finds that symptoms react to mercury when potassium iodide is ineffective; it is therefore well to combine the two drugs in all tertiary cases, the more so as there is some reason to believe that relapses are then less frequent. A second course of mercury should be given some time after the disappearance of tertiary symptoms to ensure against their reappearance.

On the Treatment of Gout.

GOUT, OBSERVATIONS ON ITS PATHOLOGY AND TREATMENT. A. P. LUFF, M.D., F.R.C.P. *The Practitioner, March, 1902.*

Our knowledge as to the actual pathology of gout still remains uncertain and has practically derived little or no advancement from the more recent investigations that have been made. One of the latest theories is that of Kolisch, who has found in the urine of gouty patients a constant excess of alloxuric substances and considers therefore that the xanthin bases are the actual poisons in gout, but his results have not been confirmed by subsequent observers. With regard to the oft debated question of heredity, it is now generally admitted that hereditary predisposition is a most important factor in its development. Recently Archdall Reid has stated that while the inborn tendency to acquire the disease under certain conditions is transmissible there is no evidence that parental high living increases it in the child.

It will generally be conceded that the deposition of a salt of uric acid, namely the sodium biurate, is intimately related to the gouty attack although there may be a difference of opinion as to whether this is the essential materies morbi. If by any means the conversion of the soluble gelatinous biurate into the insoluble crystalline form can be delayed, the advent of the gouty paroxysm is also delayed, and if during this period the elimination of this soluble biurate is promoted, then the gouty paroxysm may either be considerably diminished or averted altogether. Luff has shewn that by increasing the alkalinity of the blood serum with sodium bicarbonate, the conversion of the gelatinous biurate into the crystalline form is accelerated; while if the potassium bicarbonate be employed, the conversion is delayed in time and diminished in quantity. The result of these experiments explains the utility of the potassium salts in the treatment of gout. The citrate and the bicarbonate are the two most commonly employed. As to the beneficial effects of their employment especially in the treatment of the acute and subacute gout in conjunction with colchicum Luff is fully assured ; and his experience is that of the two the citrate is the most useful. If given in sufficiently large doses, not only does it act as a distinct diuretic, but also by its conversion into the carbonate, it tends to diminish the acidity of the urine which is generally high in connection with the gouty paroxysm; at the same time it increases the solvent power of the urine for the uric acid salts and so assists their elimination. It also delays and inhibits the conversion of the soluble gelatinous sodium biurate into the comparatively insoluble crystalline biurate. The potassium salts are also valuable in the gouty state on account of their stimulating action upon the gastric and hepatic functions.

Although emphatic in his statement of the value of the potassium salts in the gouty state, he does not consider that sodium salts are always injurious. In cases of sluggish action of the liver, of gastro-intestinal catarrh, of acute dyspepsia and of other forms of irregular gout where there are no appreciable uratic deposits in the joints, sodium salts are, in Luff's opinion, undoubtedly beneficial owing to their action as hepatic and gastro-intestinal stimulants.

The lithium salts, Dr. Luff does not consider so useful as the potassium salts. He says they have not the same inhibiting action on the conversion of the gelatinous biurate into crystalline form as the potassium salts have, and they are no better solvents of gouty deposits. An important objection to their use is their greater toxicity and their depressing action upon the heart as compared with the potassium salts. Luff states that he constantly meets with patients suffering from cardiac depression as the result of the excessive and continued consumption of lithia tablets which are so persistently, and yet so erroneously vaunted as curative of gout.

When the treatment of the gouty state is associated with a disturbance of the functions of the liver, the restoration of that organ to its normal state of activity is undoubtedly of importance, and in such cases the alkaline sodium salts are especially useful. In these cases there is no better treatment at the outset than a dose of blue pill or calomel at night followed by a dose of Epsom or Carlsbad salts in the morning. Subsequently a pill containing a small dose of blue pill or calomel combined with euonymin and colocynth will be of occasional service in connection with a mixture containing sodium bicarbonate, gentian and nux vomica before food.

A sedentary life with a deficient amount of exercise conduces to gout owing to a lowering of general metabolism, and to an impairment not only of the circulation of the blood but also of the lymph. Under these conditions the influence of massage and muscular movements in many gouty subjects becomes readily intelligible. Massage should never be resorted to in cases of acute gout but should be reserved for the more chronic cases. In cases of acute or subacute gout, considerable amelioration of the pain, sometimes complete disappearance of it follows the employment of radiant heat and superheated baths; such baths increase the oxidation processes in the body, and cause a temporary elevation in the body temperature, marked reddening of the skin of the part treated, and profuse local and sometimes even general perspiration. Cases of gout of long standing, however, in Dr. Luff's experience, do not derive much benefit from radiant heat. In such cases more good follows the employment of vapor baths with massage of the affected joints, a treatment by which he has frequently succeeded in producing softening and absorption of the deposits. Sometimes, however, radiant heat baths appear to set up trophic changes in the joints which are apparently maintained for a prolonged period after the baths have been discontinued. In several instances after the baths had been abandoned in despair, a progressive improvement continued for weeks and even months, and in a few cases progressed to a more or less complete cure.

In the acute or subacute stage of gout, Dr. Luff considers the use of the Turkish bath most undesirable, and states that he has known of its employment being followed by an exacerbation of the attack and its extension to joints not at the time affected. This point should be borne in mind by medical men.

Insomnia is a fairly constant symptom in gouty patients. As a rule it is not complete, but consists of restlessness interspersed with varying intervals of light or broken slumber. In such cases attention should be paid to the patient's pulse and to the possible existence of albumin in the urine. If, as is frequently the case, the pulse is found to be of high tension, the administration of blue pill or calomel followed by a saline purge will often prove beneficial.

As regards the preventive treatment of gout Dr. Luff has considerable faith in the prophylactic effect of guaiacum resin. Its action is probably due to its stimulating effect on the hepatic metabolism, thereby increasing as it undoubtedly does the elimination of uric acid. He prescribes it in the form of the powdered resin in cachets, commencing with a dose of 5 grains three times a day after food and gradually increases the dose to thirty grains a day. Taken in this way it gives rise to no discomfort, whereas if administered in the tincture or in a mixture a most nauseous dose results.

No hard and fast line as to dietary can be laid down in the treatment of gout; each individual must be carefully considered as regards his habit of body, his capacity for the digestion of the different articles of food, the amount of exercise he is able to take and the nature of his work. An important point is that the dietary be simple in its character. As a rule the intelligent individual who has reached middle life knows what articles of diet suit him, and which are injurious. A sufficient quantity of water should be taken to secure the flushing of the kidneys, liver and other organs and tissues and favor the removal of waste and toxic products. The free consumption of water apart from meals is most desirable.

With regard to climate, a fairly bracing air with a low relative humidity is, in Dr. Luff's experience, the most suitable for the gouty. It is especially desirable to avoid exposure to the cold east and northeast winds: high mountain regions, and valleys where there is an excessive relative humidity of the air, are alike unsuited to the gouty; residence by the sea unfavorably affects most cases of gout, and especially cases associated with acute eczema.

On the Treatment of Chorea.

ON THE TREATMENT OF CHOREA. DR. JAMES W. RUSSELL. *Treatment, March, 1902.*

The estimation of the value of drugs in the treatment of chorea is a matter of much difficulty. Not only does chorea tend naturally towards recovery but its duration is very uncertain and the greatest fluctuations are liable to occur in its symptoms. The value of small doses of arsenic has probably never been satisfactorily established, but of late much has been written about the good effect of large doses and there appears to be a growing impression, if the medical journals can be taken as a guide, that something of the nature of a specific for chorea has been discovered. Among recent writings Dr. Russell quotes the thesis of Dr. Del Pozo who reports 30 cases of this affection treated at *L'Hôpital des Enfants Malades* in Paris, with large doses of arsenic. The preparation used was the "liqueur de Boudin," a solution of arsenious acid in water. Translating the doses of this solution into terms of Liquor Arsenicalis, B.P., the quantities given were as follows:—During the first day 15 m. were administered, divided into three doses; this quantity was increased daily by 7½ m. until on the 6th day a total of 52½ m. had been reached. The doses were then diminished daily by the same amount until on the 11th day the daily dose was again 15 m. The drug was then discontinued. The total quantity of the solution taken was 352 m. In many cases, however, the increase of dose was stopped on the 5th day and the total quantity taken only 255 m. Out of the 30 cases, 28 cures are claimed. The average duration of the treatment was 9.1 days and the average interval between the beginning of treatment and the occurrence of cure, as far as was able to be made out, was 9.6 days. The length of stay in the hospital in 19 cases averaged from 18.6 days. Another series of cases are reported by Dr. Billington (*Lancet, July 21st, 1900*) in which good results followed the use of large doses. In these cases also the average stay in the hospital was only 18 days, all symptoms of chorea have disappeared for 5 or 6 days before discharge. Formerly the average stay had been about six weeks and even then many cases were sent away but imperfectly cured. The testimony in these papers in favor of the value of large doses of arsenic in the treatment of chorea is very clear, yet Dr. Russell has to admit the failure of this method of treatment in his hands to produce any definite results. All of his cases, however, were treated as outpatients and the important factors of rest in bed, good hygiene, and the moral discipline of hospital treatment were lacking. He gives the details of those cases in which he had the best results and adds that while these cases afford some evidence in favor of the larger doses, as the two in which the recovery was longest delayed were those in which the quantities of arsenic taken were smallest, yet the case in which the largest amounts were taken, 405 m. of Fowler's Solution in 11 days, changed greatly for the worse during this period. Dr. Russell states that he had the opportunity of watching only two cases treated in the wards by this method but both these cases were unfortunately failures so far as the treatment went and their course did not appear to be materially affected by the drug.

In reference to sodium cacodylate Dr. Russell states he has used this drug in a large number of cases giving it in doses varying from ¼ to ⅜ths of a grain three times a day and his best result was that of a boy aged 17 who took 23.6 grains in the course of six weeks, by which time he reported himself as recovered; the case, however, was a slight one and the result was not remarkable.

As regards the action of the bromides Dr. Russell thinks there is not much evidence in favor of their having any distinct beneficial action in chorea. Dr. Bourneville, however, recently records (*Progrès Médical, July 16, 1898*) a case treated by large doses of bromide of camphor with improvement after six weeks.

In a paper published in the *Birmingham Medical Review, July, 1899* Dr. Stacey Wilson records the treatment of a severe case of chorea with frequently repeated doses of sodium sulpho-carbolate, (20 gr. every two hours) and states that the patient made a rapid and complete recovery. Dr. Russell has employed this drug in a few cases in the out-patient department without any appreciable result.

Very recently the treatment of two severe cases by the administration of the extract of Calabar bean has been recorded. (*Birmingham Medical Review, September, 1900*). The patient was admitted on March 29th; the case at that time was so severe that chloroform had to be administered in the earlier hours of the following morning. One sixteenth of a grain of Calabar bean extract was then given three times a day until April 4th by which time there was a marked diminution in the movements, though they did not entirely cease until April 19th. In the second case the outlook seemed particularly bad on account of the inability of feeding the patient, as all food set up a violent paroxysm of choking. One sixteenth of a grain of the extract three times daily was prescribed as before; hot baths were ordered in addition, with what little massage the mother was able to carry out. The patient was seen again in three weeks time when all trace of the disorder had disappeared. Dr. Russell states that he is inclined to think that much of the improvement in this case was due to the baths but considers that the drug had also a distinct effect.

Dr. Russell concludes his article as follows:—Of the value of rest in bed and isolation little need be said, as the importance of such measures in severe cases is universally conceded; but whether such means are of value in slight cases may be doubted, unless possibly on account of their moral effect. Hot packs are of distinct value in severe cases. General massage is also of some value. Regulated exercise in the later stages of chorea may give good results so long as they produce no immediate or subsequent increase in the movements.

A. D. Blackader.

Otology.

UNDER THE CHARGE OF F. BULLER.

BAGINSKY, B.—Ueber gewisse Eigenartigkeiten der Ohrerkrankungen der Kinder.—*Berliner Klin. Woch.*, Feb. 10th, 1902.

A peculiarity of the child's organism, noticeable in its physiological behaviour, is observable also under pathological conditions in the most widely different diseases affecting the same, and this peculiarity is apparent not only in the diseases of the internal organs but also, and perhaps still more, in affections of the sense organs, especially that of hearing.

The frequency with which children suffer from diseases of the ear and the greater severity of the sequelæ of aural affections in childhood, constitute certain peculiar features which place children in a separate class and find their explanation only in a special study of the various parts connected with the child's organ of hearing.

As regards the temporal bone one has to consider the ossiferous and developmental conditions in general. It is well known that in growing organs the parts are more susceptible to injury and disease than under ordinary circumstances, and there is present, therefore, at the outset, in the delicate and rapidly developing temporal bone of children, a greater predisposition to disease than is the case with the adult structure.

But in addition to this, certain inherent peculiarities still further predispose the child's temporal bone to disease. The fissura-petroso-squamosa situated in the tegmen tympani and almost entirely ossified in adults, transmit in children a vascular prolongation of the dura mater directly into the middle ear. In this way the tympanum and the cranial cavity are in more direct communication in children than in adults and diseased conditions extend more readily as well from the middle ear to the brain as in the reverse direction.

A further peculiarity is seen in the hiatus subarcuatus, a slit-like depression in the posterior surface of the petrous bone below the superior semi-circular canal. Through this structure a process of dura mater with the vasa subarcuata passes directly into the bone and it has been shown lately by Lucæ that, particularly in children, osseous suppurations and inflammations can extend by this channel into the cranial cavity, either directly through implication of the bone or through the agency of the vessels.

Finally, the fissura-mastoidea-squamosa and the fissura-tympano-squamosa, transmitting as they do connective tissue processes to the middle ear, can also serve as channels for the passage of possible diseased processes and inflammations, though truly these ways are more uncommon.

The Eustachian tube of children, shorter, much wider and more horizontally placed than in adults, permits on the one hand diseased conditions to pass more readily from the nasopharynx to the ears, and on the other hand renders it possible for infections of the gastro-intestinal tract to occur through the medium of the deleterious substances aspirated from the middle ear during the sucking and swallowing movements of the child.

As an outcome of the work of Meyer an endless number of clinical studies has made every physician aware that characteristically in children, as a result of so-called adenoid vegetations, disturbances of ventilation and irritations of the middle ear frequently occur and express themselves directly or after a consecutive otitis in grave disturbances of hearing.

To these local peculiarities must be added the general behaviour of the child to outside influences. The greater susceptibility of the child's nervous system, the frequent appearance of convulsions and the relatively slight resisting power of the whole organism are matters of moment in the appreciation of ear diseases among children.

For the understanding of certain pathological processes one must also bear in mind the recognized fact that in children the character of the mucous membrane, as such, is more marked than in the adult, and various pathological experiences go to show that changes easily occur in the child's ear which in the adult could only be accounted for by severe general disturbance.

Coming to the clinical peculiarities which mark aural diseases in children little is to be said regarding the external ear except, perhaps, that eczema is more frequently met with and more difficult to treat on account of the age of the patient. Of much more importance are the diseases of the middle and internal ears.

From those regular cases of acute suppurative otitis media are to be distinguished the forms which show certain peculiarities in their origin and course. These cases occur mostly among older children and generally run a febrile course. They begin usually of a sudden without any apparent cause, but accompanied by systemic derangement, headache, lassitude, more or less pain in the affected ear and fever which can rise, usually with only slight morning remissions, to 103° or more. Pains radiating to the teeth, mastoid process, and temporal region are often present, and, at times, especially among younger children and sucklings, spastic conditions of the muscles of the neck and opisthotonos occur. These symptoms are apparently reflex from irritation of the nerves of the middle ear. The affection continues for several days until liberation of the exudate occurs through spontaneous or artificial perforation.

Much more difficult for the practitioner are the cerebral or meningeal forms of middle ear disease, which occur among children and set in under the cloak of a genuine meningitis. The affection begins often suddenly and the unsuspecting physician, seeing a perfect picture of an acute cerebral inflammation, may be led into error in his diagnosis and prognosis. A systematic examination of the ear reveals however to the informed attendant an acute middle ear suppuration and recovery follows gradually upon proper treatment of the aural condition.

Of still greater interest, because especially peculiar to the child, is the further variety of the meningeal form of ear disease, the primary genuine inflammation of the labyrinth or otitis intima. This not exactly common and destructive disease sets in suddenly with fever, headache, convulsions and nausea, symptoms which lead the physician to think of some internal condition, and the more so as in the following days stupor, stiffness of the muscles of the neck and irregularity of the pulse frequently appear. But while after a few days the above mentioned symptoms begin to disappear, and a certain euphoria gradually occurs, there often remains, as the only symptom, a double sided deafness with occasionally a disturbance of co-ordination, which shows itself in a certain dragging of the feet and unsteadiness in the sudden movements and turnings of the body. These cases, which occur almost entirely among children, are extremely difficult to diagnose, because in the great majority of instances the aural examination is entirely negative; and indeed often a proper conception of the disease is only obtainable through lapse of time.

In conclusion it must be emphasized that in the aural affections following the infectious diseases among children, serious changes in the temporal bone occur much more rapidly in the child than in the adult, and further that, keeping this fact in mind in treating those of tender years, quickened efforts to arrest the morbid processes will be rewarded by many a good result.

W. Gordon M. Byers.

Reviews and Notices of Books.

PEDIATRICS. The Surgical and Medical Treatment of Children. By THOMAS MORGAN ROTCH, M.D., Harvard University, 3rd Edition, rearranged and rewritten. J. P. Lippincott Co., Philadelphia, 1902.

It was with much pleasure that we have read this third edition of Dr. Rotch's work on Pediatrics, which we are told has been entirely rewritten, and may be regarded as virtually a new book. No other work that we are acquainted with gives such an excellent account of the disorders of infancy and the management of infant feeding. In these chapters much attention has been devoted to the anatomy and physiology of early life; specific infectious diseases are well described and well illustrated. Diseases of the special systems follow. Dr. Rotch writes clearly and illustrates his text with numerous histories which serve well to impress the picture of the disease on the reader's mind. The work is well illustrated and several new colored plates and radiographs have been added. We can cordially recommend this work to our students and to physicians in general as an excellent practical treatise on a most important subject. It is scientific and practical and deserves to have a place in the library of every physician.

MATERIA MEDICA, PHARMACY, PHARMACOLOGY & THERAPEUTICS. By W. HALE WHITE, M.D., F.R.C.P., Lecturer in Medicine, Guy's Hospital, London. Edited by R. W. Wilcox, M.D., Professor of Medicine and Therapeutics in New York Postgraduate School. P. Blakiston, Son & Co., Philadelphia. Price, $3.00 nett.

The fifth edition of this work which both in England and America has for many years occupied the position of one of the leading textbooks for students, calls for but few words from us at the present time. The American Editor has quite expurged from this edition all the preparations of the British Pharmacopœia and substituted for them those of the United States, thus rendering it less useful as a textbook in Canada than it otherwise would have been. Nevertheless to those of our students who purpose practicing in the States we can recommend the work as a clear exposition of our knowledge of the therapeutic action of drugs.

PROGRESSIVE MEDICINE. Edited by HOBART AMERY HARE, M.D.; assisted by H. R. M. LANDIS, M.D., Vol. I, March, 1902, Vol. II, June, 1902.

With the rapid advances made in all departments of medical science, a short readable annual retrospect embracing all that is of value in the several departments of medicine and surgery is of the greatest value to the practitioner who would keep abreast in his work. These volumes purpose not only to be a résumé but also a criticism of medical literature for the year, written by men, acknowledged by all as authorities in their departments. For this reason no year-book, in our opinion, so happily fulfils its purpose as these quarterly volumes of Progressive Medicine. Since it first started four years ago we have been regular readers of its reviews and have consulted its pages in all departments with pleasure and profit. In the first volume for 1902, the article on the surgery of the head, neck and chest has been prepared by Chas. H. Fraser. Speaking on surgical intervention in cases of chronic hydrocephalus, the writer states that not the slightest relief has thus far been obtained, as the mortality has approached 100%. Epilepsy is still regarded as the "bête noire" of the surgeon and removal of the sympathetic ganglia has fallen into deserved disuse. Dr. Crandall discusses the diseases of children and Dr. Fred. A. Packard writes on acute rheumatism, croupous pneumonia and influenza. Dr. Ludwig Hektœn treats on general pathology.

In the June volume the review of the surgery of the abdomen is written by Dr. Coley. Discussing the treatment of tuberculosis of the peritoneum he quotes a recent article by Finger, who regards peritoneal tuberculosis as a disease having under favorable circumstances a tendency towards spontaneous recovery; but considers that this tendency may be aided in some cases by laparotomy. He concludes from a review of all cases reported in which laparotomy was performed, up to and including the year 1900, that a cure may be expected in from 30 to 40 per cent. of cases that under the older methods were considered fatal. A recent paper by Borchgrevink is quoted in which is given a careful analysis of two almost equal series of cases, the one treated by laparotomy and the other without operation. His conclusions are, "that in strong patients in whom fever is absent, the operation is well tolerated, especially if a good condition of nutrition speaks for the spontaneous disappearance of the tubercular process. Laparotomy, however, in patients with high fever, and in whom the tuberculosis has a progressive character, may diminish the slight power of resistance remaining to the patient. Fenger believes that laparotomy has little advantage over mere paracentesis in its effect upon the exudate. In this chapter also Dr. Coley discusses the more recent additions to our knowledge of the surgery of the stomach, kidney, liver and omentum. Dr. John G. Clarke writes the review on gynæcology and Dr. Alfred Stengel writes on diseases of the blood and ductless glands. In this chapter we have an excellent criticism of the articles which have appeared during the year on leucocytosis, the blood in childhood, hæmocytolysis, and pernicious anæmia, etc. In speaking of pernicious anæmia Stengel quotes Rumpf who has investigated the chemical constituents of the blood in this disease and has found that along with the increase of water there occurs a marked increase in the chlorine content while the potassium content is diminished. Whether this diminution of potassium is a primary manifestation due to a direct action of a toxine or is secondary to the death of the potassium-containing blood cells, it is possible that the lack of potassium may interfere with the regenerative attempts of the blood building organs, and thus lead to the fatal termination of the disease. Rumpf accordingly advises the administration of the easily assimilable potash salts and reports several cases where good results were obtained. Hunter in the treatment of this affection advises careful attention to the teeth, the administration of intestinal antiseptics and occasionally the injection of antistreptoccic serum. McPhedran of Toronto tried antidiphtheritic serum in two cases for its stimulating action on the blood and afterwards plain horse serum but both were found valueless. McCrae advises absolute rest in bed, fresh air, good food, arsenic, and a careful attention to the mouth. Recent papers on the various forms of leukæmia are also discussed, and there is an excellent review of the latest additions to our knowledge of gout and diabetes which will well repay reading. The review of ophthalmology is written by Dr. Edward Jackson and will afford to those interested a complete *résuné* of all the advances during the past year. We cordially recommend these volumes to our readers.

THE INTERNATIONAL MEDICAL ANNUAL. A Yearbook of Treatment and Practitioner's Index. 20th year, 1902. E. B. Treat & Co.

The majority of contributors to this well known annual are English, and the list includes such well known names as Allingham, Fenwick, Holthouse and Saundby, but of late years a few American writers have been added to the list. Among the more important articles in the volume are those on Toxines and Antitoxines, Clinical Examination of the Blood, Diseases of Metabolism, Epilepsy, Lateral Curvature of the Spine. There are also a large nomber of illustrations. The reviews on each subject though brief are well written; being alphabetically arranged they are easy of reference. They are also eminently practical. We have much pleasure in acknowledging its value.

INFANT FEEDING IN HEALTH AND DISEASE. By LOUIS FISCHER, M.D. F. A. Davis & Co. Small 8vo. pp. 348.

This work has been prepared with the intention of supplying a convenient guide to both the student and active practitioner in the modern methods of infant feeding. After a description of the more essential details of the anatomy and physiology of the intestinal tract in the infant, the writer discusses the difference between breast milk and cow's milk and goes on to a description of the many methods at the present time employed for the adaptation of cow's milk to the infant's digestive powers. We regret extremely that the author in our opinion gives only a very imperfect account of Rotch's method of modifying milk. It is evident that he is much more in sympathy with the views of Jacobi and the exponents of German methods than with those of the majority of American Pediatrists. Nevertheless we are quite sure that those who desire information upon this very important subject, will obtain excellent advice from this well written volume.

INTERNATIONAL CLINICS. A QUARTERLY of illustrated Clinical Lectures and Specially Prepared Articles on Medicine, Neurology, Surgery, Etc., By leading Members of the Medical Profession thoughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia. Vol. I, Twelfth Series, 1902. Philadelphia, J. B. Lippincott Company, Canadian Agent, Charles Roberts, 1524 Ontario Street, Montreal.

The present, the first of the new series, gives promise that the high standard set by the International Clinics last year, will be maintained. The volume contains a new departure in the form of Biographical Sketches of eminent living physicians, Drs. S. Weir Mitchell and John A. Wyeth being selected for notice in the present number. This will prove an interesting feature of the work, we well believe, to many who have come to know and admire these masters through their work, without the opportunity of personal acquaintanceship. In the section on Therapeutics we have an article on the use of opium, one on habitual constipation and one on the treatment of acne, the latter by Professor Hallopeau, Dermatologist of the University of Paris. Charles E. Simon, under Medicine, discusses the significance of the basophilic granules in red corpuscles, especially in plumbism. He goes into the matter fully and states fairly the present knowledge of the subject, and the article is illustrated by a coloured plate. He inclines to the view that they are evidence of degeneration. Professor Alexander McPhedran, of Toronto, reports cases of dilatation of the stomach, on one of which gastroenterostomy was performed with only partial relief of the symptoms. In the section devoted to Surgery these are numerous short and extremely interesting reports of rare and interesting cases. James K. Young and James Kelly, of Philadelphia, contribute an interesting article on the surgical treatment of infantile palsy by tendon transplantation. The articles on the special subjects of the eye, ear, etc., are timely. The last hundred pages of the volume give a review of the progress of Medicine during the year 1901, compiled by Dr. E. W. Watson. The review, although necessarily somewhat condensed, is very comprehensive and will be of great value to the majority of practitioners who do not invest in the larger year-books and need some reference of this kind.

The volume is profusely illustrated by coloured, black and white plates and figures in the text and maintains the high standard of its well-known publishers.

THE PRACTICAL MEDICINE SERIES OF YEAR-BOOKS. Comprising ten volumes on the year's Progress in Medicine and Surgery. Issued Monthly. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D., Volume III. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C.M., M.D., Albert H. Andrews, M.D. and T. Melville Hardy, A.M., M.D., December, 1901. Chicago, The Year-Book Publishers, 40 Dearborn Street.

This little volume will be a welcome visitor in the library of every busy practitioner interested in the subjects therein reported. The three special subjects are fairly evenly divided in the small volume of 364 pages, and the whole forms an excellent résumé of special work during the preceding twelve months the world over. The work contains much useful information presented in an agreeable, readable form and we cannot too highly recommend this practical series for those who have not time for the laborious perusal of many medical journals.

F. B.

Correspondence.

NO. X. CANADIAN FIELD HOSPITAL.

Head-Quarters, Canadian Field Hospital,
Western Transvaal, May 21st, 1902.

To the Editors of the Montreal Medical Journal.

During the earlier stages of the present war a great deal of time was devoted to the criticism of hospitals in general, and field hospital in particular.

In many instances this criticism was of an adverse nature, and unjustified. Even at the present time, with railroads in operation, with increased facilities for transport off the line, and with more accessible medical stores, a field hospital is somewhat disappointing to those in charge.

With wind, dust and rain storms, it is impossible to preserve cleanliness. Food, clothing and dressings all show signs of unavoidable dirt, and to a casual visitor might suggest carelessness and inattention on the part of medical officers and orderlies but such is not the case, and the patients, realizing the disadvantages under which all ranks are laboring, are cheerful and contented.

Though the personnel of the Canadian Field Hospital differs very little from that of a similar organization, on active service, as laid down in the manual of R.A.M.C., there are many points of dissimilarity in the equipment, plan of encampment, compactness, lighting, and method of transporting patients. In the matter of personnel the addition to our staff of a dental surgeon is a most invaluable feature, for nowhere does a man suffer more from dental neuralgias, ulcerating roots and alveolar abscesses than at the front, exposed to wet and cold nights, without shelter, and with insufficient clothing, and nowhere does a tooth broken by an inexperienced hand cause more suffering and annoyance.

Many officers advance as an argument against the appointment of dental surgeons that men with bad teeth should not be passed for active service, or should have their teeth attended to before being sent into the field. Granted, but where is it possible to recruit an army with sound teeth: many an officer having his teeth filled before sailing finds himself after a few months on hard tack biscuit as bad as before. Our dentist with his excellent equipment of instruments and temporary fillings (gold extra), is as a rule the busiest man in camp, and most popular with men who have been in the trek for two or more years. He is about to be appointed Government Dentist.

With our present personnel and equipment the hospital is readily divisible into two sections accompanying troops, or as at present, the larger section acting as a stationary hospital, the other can accompany a column and transfer its cases to it.

In order to render the hospital so readily divisible the equipment has been duplicated in almost every particular, especially as regards surgical and medical panniers, surgical haversacks, field companions, filters, Forbes sterilizers, instrument and dressing sterilizers, supplementary instruments, dressings and hospital comforts, one large additional sterilizer being available for the section of hospital in rear.

The officers, ward and transport orderlies, are also so versed in their duties as to admit of division.

The transport waggons convertible into ambulances, are somewhat similar in pattern to the Canadian prairie waggon. Strong but light running, they carry four lying-down and two sitting-up cases, and have all necessary waggon accessories, a detachable galvanized iron tank holding 8 gallons sterilized water, can be placed on tripod over fire and boiled, or as at present, owing to the scarcity of fuel, filled while in camp, from a Forbes sterilizer. The lightness of the waggons as compared with regulation English pattern can be realized from the fact that we frequently carry four lying-down cases to Klerksdorp, 40 miles in 24 hours with two horses and that in the four stretchers there is a saving of over sixty pounds; a Canadian stretcher weighing 15 pounds to the regulation 34.

The "Hubert Tent" with which we are supplied is most admirably adapted to this climate, the tent proper, kharki in colour, with a fly of white canvas, is a great relief from the glare of the sun and readily ventilated, is cool during the hottest day, and warm on winter nights. It has also tarpaulin flooring.

The arrangements of tents according to the enclosed plan of encampment we have adopted and found most satisfactory and convenient.

Arranged in the form of crosses, with flies meeting (except in the central compound which is covered separately by rectangular fly suspended from pins of ridge poles) they comprise, one cross, 8 wards, capable of holding from 64 to 80 patients according to use of beds or stretchers, and two smaller crosses of 4 wards each. This plan of encampment commends itself for adaptability and compactness and is unique and picturesque. With the doors rolled up one can see through the four wards at once, while from a convenient desk in the central compound the ward-master can readily overlook the 8 wards at a glance, superintend the work of the orderlies, and the conduct of patients. In one corner of this compound can be placed a Forbes sterilizer from which hot and cold sterilized water is at all times available; in another corner, or rather outside, for safety, is an acetylene gas-plant, from which tubing conveys the gas through the tents to lights of 30 candle power each.

The plan of encampments in cross formation is readily changeable as regards the number of tents employed. In this plan the larger cross is available for medical or surgical cases, according to their respective predominance. With the eight tents available as surgical wards one smaller cross of four can be used for enteric and dysentery cases and the last for other ailments, convalescents and "up" medical cases. All are easy of access from the officers and ward section lines, the operating tent and dispensary, and the horselines are well out of the way. The dispensing and medical equipment is most excellent and compact. The medicines, mostly in "Tabloid" form, were specially packed for us by Messrs. Chandler & Massey of Toronto, in panniers and boxes of their own construction, which are quite equal to those of the regulation pattern, their sterilizing chest being most complete. These articles have been satisfactorily commented on by inspecting officers and it is with pleasure that we hear we can in future obtain their goods by specifying their name.

With a field hospital constructed on these lines, the transport section and disengaged ward orderlies can be utilized during or after an arrangement (preferably the latter, as their continued presence on the firing line is of doubtful use) for the same purpose as a Bearer Company, thus doing away with the latter. Situated as we are, the want of an X-Ray plant is sadly felt. Influenced by the opinion of Surgeon-General Sternberg, U. S. Army, who, for reasons based upon his experience in the late Spanish War, is not in favor of the use of an X-Ray plant in a field hospital, we decided not to bring one; but hope in the event of the continuance of the war that it may be added to our equipment. Here the exigencies of the case are vastly different, the distances are great, and it is frequently days or even weeks before a wounded man can be got to the rear or to a stationary hospital; and there is no reason why a portable X-Ray with storage batteries might not accompany a Field Hospital with the main body of an army.

So much has been said and written about the use of explosive bullets that the recital of a few cases of extensive injury from non-explosive bullets may be of interest and assist in dispelling the idea of their indiscriminate use.

Case No. 272 Tpr., South African Constabulary. Ambulance sent out 25 miles and patient brought to hospital April 17th, 6 days after injury. *Gunshot wound.*—Right thigh, right forearm, left foot (two latter wounds healed readily). Condition of patient very low, precluding any operative interference. Right leg was four inches shortened, thigh was enclosed in coaptation splints, and without extension. One hurried examination under anæsthetic two septic offensive wounds were found.

Entrance.—Lower third of thigh outer aspect, behind border of tensor facial femoris.

Exit.—Front aspect of thigh at level and in front of tuberosit of femur.

From the wound of exit which was ragged and five inches long by three wide, the overriding ends of the femur could be seen. The limb was scrubbed. Alcohol and ether used—the wound irrigated with bichloride, swabbed with pure carbolic and washed out with alcohol; several large fragments of bone being previously extracted, one, quite four inches in length by three-quarters in width; drainage tube passed from exit to entrance wound and a double-inclined splint (made of wire and Yucca wood covered with mackintosh) applied, and bent to fit the buttock—thus giving support from the pelvis,—with extension. For several days it was a question whether amputation of the hip joint should not have been attempted, but the low condition of the patient, septic state of wounds and loss of tissue rendering a good flap impossible, fortunately prevented such a course, and union has taken place ; patient is progressing favorably, and will doubtless have a very useful limb, after five weeks of daily irrigation and dressing.

A case almost identical with this occurred in "E" Battery, Can. Field Artillery, when Corpl. Neild was accidentally shot from the Colt gun of the Imperial Yeomanry at a distance of fifty yards. The bullet .303 first passed through the arm of the trooper, then entered Neild's thigh, shattering the femur as in the former case—point of entrance small, the point of exit being below the fold of the buttock and fully 3 by 5 inches in extent and very ragged with numerous spiculæ of bone protruding. The leg was afterwards amputated at No. 11 Hospital, Kimberley, and a subsequent operation found necessary, from which patient succumbed.

Case No. 453, Border Regiment. Accidentally shot in blockhouse, admitted 5 hours after injury, gunshot wound.—Leg bullet, Lee-Metford, entered from a distance of 30 yards.

Entrance inner aspect of lower third of tibia, exit diametrically opposite and about the wound, 2½ inch. long by 1 wide. Patient had been dressed by Medical Officer, who stated that he would do till the morning. Wound was then dressed under anæsthetic and fragments removed, 17 in number, from tibia, simple transverse fracture of fibula existing. Patient did well for three days, foot and knee below and above splint looking quite normal with entire absence of swelling; then trouble began, and the leg was amputated at knee joint. It was subsequently learned that patient's comrades had kept a leather shoelace tied tightly below the knee for 3 hours to prevent hæmorrhage.

Many similar cases can be instanced of great loss of tissue from non-explosive bullets; some even where the bone has been uninjured. From these points we would gather:—

1. That a bullet on striking a bone, may frequently perforate that structure without fracture, especially in flat bones like the scapula and ilium, or the softer ends of long bones like the head of the tibia; condyles of the humerus or femur; bones of tarsus; and, rarely, the shafts of long bones.

2. That extensive gaping wounds of entrance, or exit, or both, may occur with weapons used accidentally.

3. That extensive wounds of exit are often caused by spiculæ of bone impelled forward from compact of bullet; and by the shock from impact forcibly bending a limb in the direction of progress of bullet. Or, the bullet may be altered in its shape from impact with the bone, or deflected from the same cause and proceed sideways.

4. That extensive wounds may be caused by a ricochet, the bullet being in consequence flattened, or bent in its long axis, thus causing a large entrance as well as exit.

5. That the wound of entrance may be longer than that of exit, torn and ragged. This we have sometimes found to be the case with a bullet which has struck a bone close to the surface; as an instance case No. 248, Boer, with wound of left thorax, entrance to left of left nipple, wound 2 inches long and ¾ wide, extensive injury to lung, wound of exit to left of outer scapula margin behind being small, thus indicating a normal bullet. In this case the larger wound may have been caused by the sudden severing of a rib and tearing of tissues by the rough ends.

6. Again bullets deflected in their course before reaching their object may cause a larger entrance wound, as in case of Corpl. Brown,

R.C.F.A. He was laying a gun when a Mauser bullet glanced off a wheel-spoke and struck him in its long axis sideways on the neck, severing the external jugular, and passing in this position diagonally backwards from where it was extracted a few days later.

Case No. 445, Tpr. 10th, M. I., admitted 4-5-02., 2 days after injury, G. S. W.—Trachea and right lung.

Patient was in the act of rising from the sitting position, and thus, stooping somewhat forward, when accidentally shot by a comrade "shooting off," the "safety" of his rifle at 20 yards. The ball, Lee-Enfield, entered the middle line of neck ½ an inch above the upper border of the manubrium sterni, passing through the trachea and coming out just below the spine and of right scapula at junction of inner and middle thirds.

At the same time there was very little bleeding from the wound in neck, but considerable from that behind over the scapula; a tracheotomy tube was inserted through which for several days thick bloody mucus was expelled by coughing, the tube was then removed, as patient breathed well without it, and thin antiseptic gauze kept over wound which has granulated over and closed. The wound in the neck being septic and discharging, gauze drainage was employed through the hole in the scapula and a large probe passed daily, to prevent closing and facilitate drainage, patient could not speak above a whisper but has rapidly regained his voice; and is transferred convalescent. Here also the wound of entrance was larger than that of exit—being ¾ in. long by ½ wide.

A. N. Worthington, A.M.S.,
Lt.-Col. Commanding No. X. Field Hospital.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. JULY, 1902. No. 7.

SPECIAL NUMBER.

THE HISTORY OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

For some time past the Editors of the MONTREAL MEDICAL JOURNAL have had in view the publication of an article descriptive of the new buildings of the Medical Faculty of McGill University, which were formally opened by the Prince of Wales, during his recent visit to Canada. The preparation of this was entrusted to Dr. Maude E. Abbott, Curator of the Museum of the Medical Faculty. It was seen, however, that an article of much wider scope, dealing with the history of the Medical Faculty since its inception, would be of far greater interest, both by showing the progress in medical teaching and in bringing together much valuable information regarding the pioneers of medicine in this Province, information which has hitherto been scattered throughout the medical journals of that period. As the founders of the first medical school in 1824, were all members of the Medical Staff of the Montreal General Hospital, established five years previously, in 1819, the history of the two is intimately associated, and an account of the origin of one is incomplete without including that of the other. Furthermore, for a proper understanding of the causes which led to the establishment of a hospital and medical school in the early twenties, a short description of the then existing social conditions among the poor, and of the need for gratuitous medical services is required to render the article more complete.

Dr. Abbott, in preparing the article, has used the utmost care to make it accurate, by consulting original documents and archives in Ottawa, Montreal and elsewhere. She has, in addition, had the advantage of obtaining information and advice from several well-known authorities upon the early history of Montreal.

This article will form the August number of the Journal and will contain numerous illustrations, comprising, among others, portraits of the founders of the medical school and university, cuts and plans of old Montreal, views of the various buildings occupied by the school, and plans and photos of the present home of the Medical Faculty.

The Editors feel that this article cannot fail to interest all graduates and students of the school, whilst the struggles and devotion of the early teachers form an instructive and encouraging chapter in the history of medical education in this country.

STUDIES FROM THE ROYAL VICTORIA HOSPITAL.

Through modesty and mischance—those of the Editorial Board in charge of the subjects treated, happening to belong to the staff of the Hospital and not liking to cry up their own wares, and those not so connected expecting them to make the necessary move—it happens that no notice has so far been taken in these pages of a series of publications which contribute a new departure in Montreal which, without unduly vaunting ourselves, we think we may say are a credit to Canadian Medicine. We refer to the Studies from the Royal Victoria Hospital, of which since the autumn of last year three numbers have appeared, each in the form of a monograph of some sixty to eighty pages. We have not as yet advanced so far in Canada as to possess any learned society wealthy enough to publish detailed communications upon medical subjects. Studies of this nature are out of place in medical weeklies, and even in the monthly journals whether here or elsewhere, and in the organs of special departments of medicine, anything above twenty pages in length gains entrance with difficulty and only after long delay, more particularly where illustrations are needed. It may be questioned whether all that is necessary may not be written within this latter limit. Undoubtedly, in most cases it can be brought into this compass, and that with positive advantage for both general readers and the particular writer.

When, however, an investigator has spent many months sedulously cultivating one particular field, there is much in the matter of detail which he acquires which is likely to be of value, not so much to the general reader as to others cultivating this same ground. To develop this into an independent publication in the form of a book is too often inadvisable, if only from monetary considerations—the interested public is too small in numbers. Here it is that Hospital or University Reports may fulfil a most useful function. Too often these are relatively valueless—we refer, for example, to the Reports of the great London hospitals. Their very bulk, the mass of contained matter, good, bad and indifferent, on all kinds of medical subjects, is against them—and in these a communication of first rank is buried, in fact, a more secure burial place could not be devised. But, if, following the example of Johns Hopkins, communications of a certain order only be accepted for the Reports, be issued separately and be so distributed that they reach the various medical centres and those specially interested in the subjects treated, then it is that such reports become of peculiar value to all parties.

Following this line of thought the Governors of the Royal Victoria Hospital has instituted this series of Studies, and this in a form that in print, illustration and general appearance, is very attractive. We trust that the friendly rivalry subsisting between the two institutions will lead those interested in the General Hospital to find the necessary funds—and the yearly sum required is not excessive—to permit that institution to follow the good example. For these Studies show that the younger generation in Montreal is capable of producing work of a singularly high order—work which we trust will materially add to the reputation of our city as medical centre.

The first number of the series is on the subject of the Intradural Tumours of the Optic Nerve. Dr. Byers discusses these in all their aspects; the work would seem more particularly valuable from the light thrown upon the histology and relationship of these somewhat rare growths and from the conscientious study at first hand and analysis of the previously recorded cases. Of these until the end of 1900 he was able to collect 102 cases, three of which are reported from Montreal. What is remarkable is the great discrepancy in the pathological diagnosis of the nature of the tumours. With great clearness Dr. Byers shows how many of the diagnoses—such as those of glioma, glio-sarcoma, and carcinoma—are, in the light of present knowledge, obviously wrong, so that all the cases come under one or other form of overdevelopment of the fibrous connective tissue of the sheath of the optic nerve; that, in short, the condition is one of fibromatosis—a conclusion which throws light upon the progress of the condition, the histological variation and, as he points out, the frequent existence of coincident intra-cranial growths either along the intra-cranial portion of the optic nerve or along other nerves. He concludes with a careful study of the treatment of the condition, analytical tables and a well arranged bibliography. The work promises to be the "locus classicus" for some years to come upon this particular subject.

In the second number, Dr. Shirres gives what we believe is the most thorough and complete study of a case of Porencephalus which has yet been afforded. The case is in many ways remarkable: That of a woman of 76, who had gone through life with complete absence of the greater part of the left hemisphere, including the whole of the motor area of that side, and who yet had shown little evidence of the effects of the same—had no convulsive seizures, inconsiderable rigidity of the fingers of the right side, only moderate want of development of that side; who, in short was so little removed from the normal to outward appearances as to have gained and lost two husbands. Obtaining his material very shortly after death, Dr. Shirres employed it to make a minute study of the various tracts in the brain and cord, and has obtained valuable information upon the relationship between the cerebrum and cerebellum, the relationship of the direct pyramidal tract, the fibres composing the fillet, Gower tract, the peduncular tracts, etc. Incidentally, he discusses the characteristics of primary and secondary degeneration and the causation of spasticity. The article is illustrated by eighteen photographic reproductions and diagrams.

The third number, by Dr. A. G. Nicholls, is on that curious progressive and proliferative condition of the serous membranes which leads to the deposit upon them of a thick tallowy layer of hyaline connective tissue. We have no adequate term for this; in fact, it is difficult, if not impossible, to suggest a term which will at the same time indicate the chronic proliferative nature of the condition, its tendency to affect more than one of the larger serous cavities, and the peculiar thickening which results. Neither "Zuckergussleber," a term not infrequently used, nor "Icing liver,' its English equivalent, is satisfactory, because either term indicates but one of the regions affected. Dr. Nicholls speaks of it as "Multiple Progressive Hyaloserositis," probably if the term be accepted "hyaloserositis" alone will be found ample. It is certainly better than the chronic Polyorromenitis, suggested by an Italian worker.

Dr. Nichools gives a very full story of a typical case seen in the post mortem room at the Royal Victoria Hospital, and of other cases showing the condition to a greater or less degree; he discusses fully the literature upon the subject; falls foul of Pick's "Pericarditic

Pseudocirrhosis of the Liver" (in which we find he is well supported by the speakers at a recent discussion at the Chicago Pathological Society); points out the essentially inflammatory nature of the condition and traces its origin to inflammations of a low type originating in any one of the serous cavities, though most frequently in the abdomen; shows that it is not of tuberculosis origin, though tuberculosis and peritoneal cancer may both lead to a somewhat similar progressive thickening. He gives a table from the differential diagnosis between "Zuckergussleber," atrophic cirrhosis, chronic tubercular peritonitis and carcinoma of the peritoneum, which is of definite value, though reading over the records of the cases so far recorded one is convinced that diagnosis is a matter of peculiar difficulty and must be so from the varieties in the parts affected. The paper is useful as calling renewed attention to this "hyaloserositis" as a possible condition in cases of prolonged ascites with little œdema until the terminal stage. Here again—at least in our language—the paper fills the void, for there is no previous study of this condition in all its aspects.

J. G. A.

CANADIAN MEDICAL ASSOCIATION.

Arrangements are being gradually completed for the meeting of The Canadian Medical Association, and the provisional programme of papers and other contributions, containing as well an announcement of the entertainments, will soon be published and forwarded to members of the Association.

The railway companies have reported a clerical error in the transportation announcements with reference to points east of Montreal. It should read as follows :—

From points east of Montreal : If ten or more delegates are in attendance from Quebec city, Megantic and east thereof, holding standard convention certificates, delegates from such points will be given tickets free for return.

To those who come from points west of Fort William, the following concession has been made by the Canadian Pacific, Canadian Northern and Great Northern Railways:—

Return tickets will be good, as in previously mentioned arrangements, up to October 12th, provided that, on the return journey, the destination is reached by that date.

MONTREAL MEETING, SEPTEMBER 16TH, 17TH AND 18TH.

PROVISIONAL PROGRAMME.

(The general meetings and evening addresses will be held in No. 111 Lecture Room, Medical Faculty, McGill University. The Sections will meet in other lecture rooms of the same building.)

First Day.

9.30 a.m.—General Meeting: Proposal of Members; Notices of Motion, etc.; Striking of Committees.

10.30 a.m.—Meeting of Sections.

Surgical Section.

Paper by Dr. A. Primrose, Toronto—Filariasis Cured by Operation.
“ “ Dr. Perry Goldsmith, Belleville—Hæmorrhage in Removal of Adenoids.
“ “ Dr. H. D. Hamilton, Montreal—Complete Occlusion of Posterior Nares.
“ “ Dr. Casey A. Wood, Chicago—Empyæma of Frontal Sinus.

Medical Section.

Paper by Dr. John Hunter, Toronto—Pleurisy Associated with Tuberculosis.
“ “ Dr. A. E. Orr, Montreal—On Blood Pressure, clinical observations.
“ “ Dr. G. A. Charlton, Montreal—Anæmia due to Toxines.
“ “ Dr. J. R. Clouston, Huntingdon—The Country Doctor of To-day.

2 p.m.—General Meeting. Proposal of Members, etc., followed at
3 p.m. by Address in Surgery by Dr. John Stewart, of Halifax, N.S.
5 p m.—Garden Party at Residence of Mr. James Ross, Peel Street.
8.15 p.m.—President's Address, followed by Lantern Demonstration of Skin Diseases by Dr. Corlett, of Cleveland, Ohio.

Second Day.

8 a.m.—Exhibition of Cases at the different hospitals. Montreal General Hospital, Surgical cases; Royal Victoria Hospital, Medical cases; Hotel Dieu, Medical cases; Notre Dame Hospital, Surgical cases.

9.30 a.m.—General Meeting, followed by a Discussion on “ Diseases of the Gall Bladder and Bile Ducts;” (a) Medical Diagnosis introduced by Dr. A. McPhedron, Toronto; (b) Medical Treatment, introduced by Dr. A. D. Blackader, Montreal; (c) Surgical Diagnosis, introduced by Dr. Jas. Bell, Montreal; (d) Surgical Treatment, introduced by Dr. J. F. W. Ross, Toronto, followed by Dr. G. E. Armstrong, Montreal.

2 p.m.—

Medical Section.

Paper by Dr. J. F. McDonald—On Tuberculosis.
“ “ Drs. Starr and McKenzie, Toronto—Multiple Sarcomata.
“ “ Dr. A. D. Blackader, Montreal—On Therapeutic Uses of Alcohol.
“ “ Dr. Maude E. Abbott, Montreal—Methods of Classification in Medical Museums.
“ “ Dr. D. A. Shirres, Montreal—Degeneration of Spinal Cord in Anæmia, etc.

Surgical Section.

Paper by Dr. G. A. Peters, Toronto—A New Symptom of Intestinal Paralysis in Peritonitis.
“ “ Dr. Ferguson Chicago—Removal of Prostate by Perineal Incision.
“ “ Dr. G. E. Armstrong, Montreal—Treatment of Prostatic Hypertrophy by Suprapubic Incision.
“ “ Dr. J. O. Orr, Toronto—Artificial Astigmatism.
“ “ Dr. Burnham, Toronto—Sympathetic Ophthalmia.
“ “ Dr. Monod, Montreal—

Obstetric and Gynæcological Section.

Paper by Dr. Robinson, Ottawa—Normal Labor.
“ “ Dr. Smith, Montreal—
“ “ Dr. Lockhart, Montreal—
“ “ Dr. Chipman, Montreal—

8.15 p.m.—Address in Medicine by Dr. Wm. Osler, Baltimore, followed by Reception in Engineering Building at 9 o'clock.

Third Day.

8 a.m.—Exhibition of Cases at the different hospitals. Montreal General Hospital, Medical cases; Royal Victoria Hospital, Surgical cases; Hotel Dieu, Surgical cases; Notre Dame Hospital, Medical cases.

9.30 a.m.—General Meeting: Reception of Reports from Committees; General Business.

10.30 a.m.

Paper by Dr. Robinson, New York—X-Ray Treatment of Cancer.
“ “ Dr. Girdwood, Montreal—X-Ray as Diagnostic and Curative.
“ “ Dr. W. F. Hamilton, Montreal—X-Rays as a Diagnostic Agent in Thoracic Disease.
“ “ Dr. S. F. Wilson, Montreal—On the Use of High Potentials in X-Ray Work.

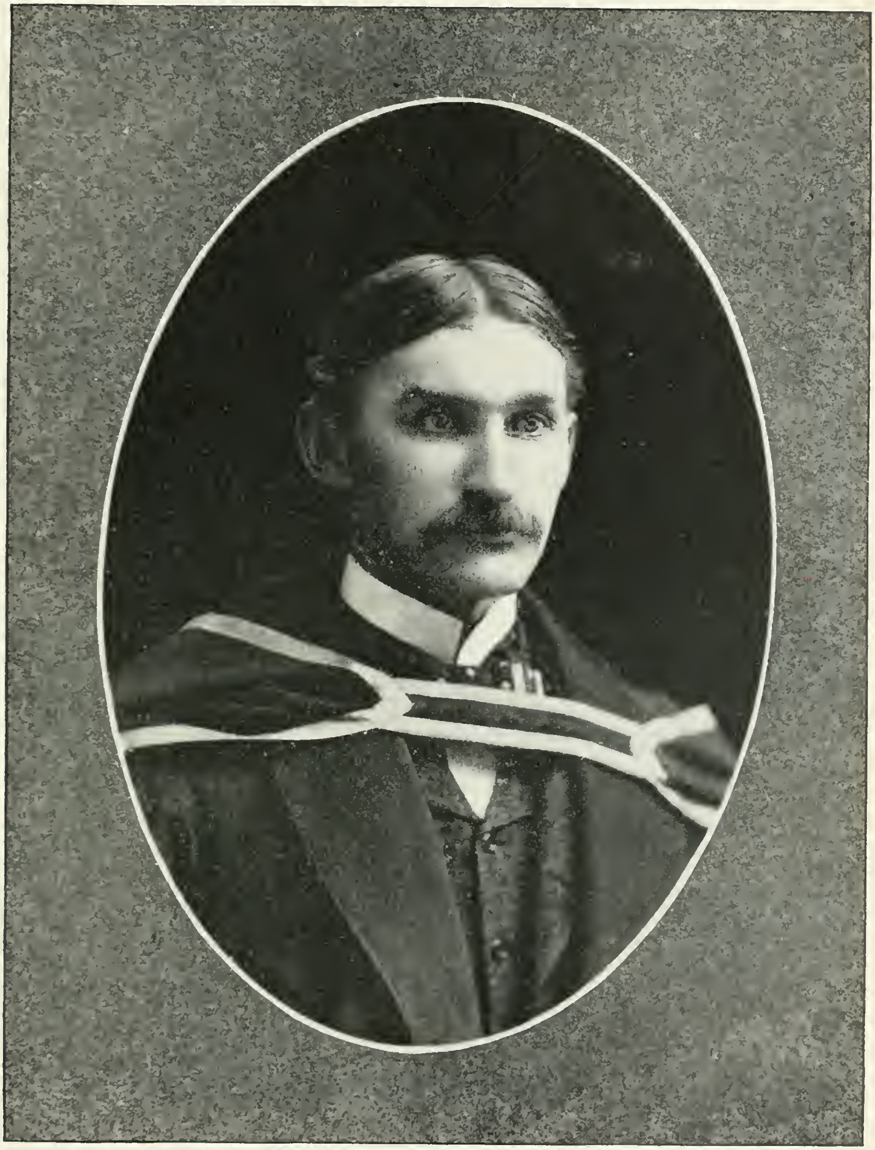
The afternoon will be given over to an excursion by rail over the Victoria Bridge and thence to Lachine (through the courtesy of the Grand Trunk Railway). From here the steamer “ Duchess of York” will make the trip up Lake St. Louis and run the Lachine Rapids, arriving in the city about 5.30 p.m. (Lunch on board steamer.) At 8.30 a “ Smoker ” will be given in the Victoria Rifles Armory, Cathcart street.

Obituary

PROFESSOR WYATT GALT JOHNSTON.

The death of Professor Wyatt Johnston, which occurred on the 19th of June, from pulmonary embolism, deprives the profession of Canada of one of its most brilliant and original members. His death was due to septic poisoning acquired in the autopsy room of the Montreal General Hospital. A streptococcus inoculation of his hand in February last incapacitated him for work for a few weeks, but he returned again to his duties, and probably received a second infection in April. A thrombus appeared in the internal saphenous vein of his left leg about the end of April, followed by a more extensive coagulation later. He then removed to a private ward in the General Hospital, and shortly after this the veins of the other leg became similarly affected, and there was evidence of the presence of thrombi in the iliac veins of both sides. Death resulted on the 19th of June from a pulmonary embolism. The autopsy showed extensive thrombi on both sides and a general streptococcus and diplococcus infection.

Dr. Wyatt Galt Johnston was the son of the late Dr. J. B. Johnston, of Sherbrooke, Que. He received his early education at Bishop's College, Lennoxville, and entered upon the study of medicine in McGill University in 1880, graduating in 1884. As a student he showed special aptitude for pathology, and was a constant associate of Dr. Osler, assisting him at autopsies and preparing material for demonstration. Immediately after graduation he became resident medical officer in the General Hospital, and during the period of his service had more than the usual responsibility on his shoulders, as the staff that year was small and continually changing. In the spring of 1885 he paid his first visit to Germany, working during the summer in Virchow's laboratory in Berlin. Next year he returned again to Germany and carried on researches in connection with pernicious anæmia in the laboratory of Professor Grawitz at Greifswald. He was appointed demonstrator in pathology at McGill, and alone he gave all the lectures and demonstrations in this department for a number of years. He subsequently returned to Germany and worked at comparative pathology in Munich and also for some months in the Zoological Gardens in London. Shortly after this he resigned his position in pathology in McGill, but still continued to work in the General Hospital, devoting himself almost exclusively to bacteriology and beginning his medico-legal work.



THE LATE WYATT GALT JOHNSTON.

In 1890 he made a bacteriological study of the water supply of Montreal, including the bacteriology of surface water generally. His very thorough report on the methods of classification of water bacteria and their sanitary importance was widely published. He was appointed lecturer in bacteriology at McGill in 1895, and was connected with the departments of pathology and hygiene. About this time also he became bacteriologist for the Provincial Board of Health and medico-legal expert for the district of Montreal. In 1897 he was made Assistant Professor in Public Health and Lecturer in Medico-Legal Pathology, and only a few months before his death received the chair of Hygiene and director of that department in the Faculty of Medicine, McGill University. He had practically occupied this chair for the Sessions 1900-01, and 1901-02, but until just before his death he was not formally appointed.

In December, 1895, he married Julia, daughter of the late Michael Turnor, of Rugely, England.

Professor Johnston's career has been a varied one ; from pathology proper he proceeded to the study of comparative pathology and spent a year in the investigation of the Pictou Cattle Disease. During this period he was associated with the Faculty of Comparative Medicine in McGill University as well as the Faculty of Medicine. Becoming more interested in bacteriology, he made a specialty of the sanitary application of this science, and was recognized as one of the best authorities on the subject of the bacteriology of water supplies. Originality, inventiveness and the power of recognizing the simplest and most direct method of reaching results, characterized his work in every department. While engaged in the investigation of the water supply of Montreal, he devised a very rapid and convenient method for collecting samples of water at various depths in such a way as to exclude the possibility of contamination. He also devised a method of distinguishing and counting the various animalculæ found in surface waters. When engaged in bacteriology in the General Hospital, his simple method for the diagnosis of diphtheria by culture on hard-boiled eggs, which is even now very widely used, was announced. His modification of the Widal reaction for the diagnosis of typhoid by means of dried serum, is also widely in use in different countries. An indefatigable worker, he tried all the methods announced that gave promise of practical value in connection with the application of bacteriology to hygiene and medico-legal work or to the diagnosis of disease. Having studied these methods, they were either immediately discarded or utilized in his work, and almost invariably improved upon or simplified. Instance after instance occurs to the writer where his inventive genius has made practical and useful many laboratory methods in bacteriology and pathology, and so to a great degree simplified the method of instruction or economized the time of both student and demonstrator.

Dr. Johnston's habit of mind, his rapidity of thought and quickness in seizing upon what was of immediate importance, makes his published writings a very poor index of the amount of work he accomplished, and only to those who knew him do they give anything but an imperfect idea of the soundness and extent of his knowledge. His mental habit of concentration and going to the root of the matter, neglecting all side issues, which made him so valuable and trustworthy as a medico-legal expert and a coroner's physician, showed itself in all his research. A given problem presented itself to him, and he worked at it until he had satisfier himself with regard to that problem only, and being satisfied with results, was extremely careless in placing them upon record. His papers are characterized by directness, they are unaccompanied by any full or orderly history of the development of his subject up to the point at which he took it in hand, and he was content, as a rule, to incidentally refer to the work of others which he was able either to confirm or refute. These references, however, were always adequate for those familiar with the matter, but not always so for the ordinary professional reader. The difficulties which he encountered in attacking the problem, the side issues which sprang up in the course of his investigations, were rarely more than hinted at; the part of the subject which interested him and which impressed him with its importance was recorded red hot. Thus his published papers, an incomplete list of the more important of which follow this notice, are apt to strike the reader as being short and hurried, and certainly do not do him justice. But one has only to glance over the list to appreciate his remarkable versatility.

His mastery of many allied branches of medicine, gross and miscroscopic pathology, both human and comparative, bacteriology in a more abstract form as well as in its applications to hygiene and public health, sanitation, medical jurisprudence in many aspects, as well as medical education, will be found among his contributions. To each of these subjects he made valued and pre-eminently practical contributions, endeavouring to popularize each subject and to bring its methods within the reach of those to whom it would be useful.

Of recent years he devoted himself to hygiene and medical jurisprudence. One of his most thorough studies in the department of medical jurisprudence, in which he probably stands pre-eminent in Canada, if not on this continent, was a method of determining the pecuniary equivalent of injuries to one or other portions of the body, a subject which was very largely neglected by English-speaking medical jurists, although it has been very scientifically investigated in France and Germany. About the time of his death he was negotiating a scheme for the use of companies with a large number of employees, and accident insurance companies, which would enable them to follow the after-effects of injuries and the conditions and treatment after leaving hospital, forming a basis from which valuable statistics could be compiled in this country and in the United States.

As a teacher, the same characteristics showed themselves, his great mental activity and his rapidity of thought often made it difficult for him to exhibit to his hearers the process by which conclusions were reached, hence, it was always necessary for him to carefully prepare his set lectures. But in practical teaching, at the autopsy table, at his weekly demonstrations in morbid anatomy, and, above all, to a few interested students, graduates or assistants in the laboratory, he was at his best. In devising methods of demonstration and of checking the work of classes in the laboratory, his originality was of much value. He was never contented unless he could develop some simple method of staining, some simple apparatus for class purposes, or for reproducing diagrams in a few minutes; method after method occurs to us all alike in their directness, simplicity and effectiveness for the purposes for which they were designed. He had a perfect genius for recognizing what was at the same time practical, scientific, sound and capable of performance by the simplest means.

In addition to his methods for the diagnosis of diphtheria and typhoid fever, already referred to, his simple method for the diagnosis of leprosy by scraping a suspected cutaneous nodule and staining the mixed blood and lymph, which exudes, and his introduction of the ordinary sterilized cotton wool swab at the end of a length of strong wire enclosed in a test tube, which now-a-days is used in all public health diphtheria outfits, may be cited as examples of how he always thought of the most direct and simplest methods of reaching his results.

But, after all, it is Wyatt Johnston, the man, the delightful companion, whose wit was ever full of such delightful surprises, that his friends and associates will regret the most. Intellectually honest, direct and simple to an unusual degree, he had the greatest contempt for all that savours of dishonesty and pretence in scientific work. His wonderful personal magnetism, his ready wit and sympathy, made him hosts of friends and admirers among those associated with him in the various organizations and societies with which he was connected—the Bar of Montreal, the Coroner's Court, the General Hospital, the Provincial Board of Health, the American Public Health Association, the American Medical Association, the American Medico-Legal Society, the Montreal Medico-Chirurgical Society, the Faculties of Law and Comparative Medicine.

The following resolution of regret, passed by the Faculty of Medicine, is but one of the many echoes of sorrow which has reached us from all parts of Canada and the United States:—

"The Members of the Faculty of Medicine of McGill University wish by this Resolution to put upon record their recognition of the great loss they have sustained by the untimely death of their brilliant colleague, Professor Wyatt Johnston.

"Throughout the twenty-one years during which he was associated with this Faculty, as student, demonstrator, lecturer and professor, his work was always characterized by a rare degree of conscientious exactness and originality. An earnest student, a thorough and successful investigator, and ever an advocate of advanced scientific medical education, his loss to the Faculty is indeed a great one.

"To his exertions this Faculty owes the practical character of the teaching in the various departments of State Medicine, with which he was connected, and also the introduction of advanced and post-graduate courses leading to the diplomas of Public Health and Legal Medicine.

"His high status among scientific men as a trustworthy investigator, especially in the fields of bacteriology and preventive medicine, has added not a little to the reputation of this University as a centre for research. His reputation as a reliable and scientific medical jurist and expert, was not confined to this city or this country, and his services to the Courts of Justice have done much to demonstrate to the professions of Law and Medicine the value of this branch of medical education.

"His colleagues in the Faculty of Medicine feel that in his untimely death each has lost a bright and cheering companion and a friend whose earnestness of purpose and enthusiasm in his work was a stimulus to all who came in contact with him,—one who was a high type of intellectual honesty combined with singular simplicity and modesty regarding his own capacity and the importance of his valuable original work.

"The Faculty further resolves to transmit a copy of this Resolution to Mrs. Wyatt Johnston and to his mother, Mrs. J. B. Johnston, and to convey to them their deep and heartfelt sympathy in the great loss which they have suffered."

The following is an uncomplete list of his more important contributions to scientific literature :—

Retrospect of Pathology—MONTREAL MEDICAL JOURNAL, 1889.

Thymus Gland—Reference Handbook of Medical Sciences, 1899.
Thyroid Gland—*Ibid.*

Retrospect of Pathology—MONTREAL MEDICAL JOURNAL, 1890.

An Unusual Case of Perityphlitis—MONTREAL MEDICAL JOURNAL, 1890.

A Rare Form of Kidney Tumer—MONTREAL MEDICAL JOURNAL, 1891.

Notes on the Bacteriological Study of Diptheria—MONTREAL MEDICAL JOURNAL, 1891.

On the Collection of samples of Water for Bacteriological Analysis—*Canadian Record of Science,* 1892.

A new Method for the Culture of Diphtheria Bacilli in Hard-boiled Eggs—*The Medical News,* 1892.

Anomalous Cases of Primary Nasal Diptheria—MONTREAL MEDICAL JOURNAL, 1892.

Fracture of the Skull from the Discharge of a Shot-gun into the left Orbit—*Montreal Medical Journal,* 1893.

Six months' Medical Evidence, Coroner's Court of Montreal—MONTREAL MEDICAL JOURNAL, 1893.

One Hunded Cases in Coroner's Court of Montreal in 1893—MONTREAL MEDICAL JOURNAL, 1893.

Return to an Order of Legislative Assembly of December 13th, 1893, upon Coroner's Inquests—1893.

"Coroner's Quest" Law in the Province of Quebec—Read before Medico-Legal Society, May, 1893.

Report of Special Committee appointed by Montreal Medico-Chirurgical Society to amend Coroner's Law for Province of Quebec—MONTREAL MEDICAL JOURNAL, 1894.

Coroners and Inquests—The *Gazette,* February 8th, 1894.

Statistics of Coroner's Court, Montreal, for 1893—MONTREAL MEDICAL JOURNAL, 1894.

A Biological Analysis of Montreal Water Supply from November, 1890-November, 1891—MONTREAL MEDICAL JOURNAL, 1894.

The Use of the Autoclave for Sterilizing Nutrient Gelatin—*The Medical News,* 1895.

A few Observations upon Sedimentation in Water—Trans. American Public Health Assoc., 1895.

On Grouping Water Bacteria—Trans. American Public Health Assoc., 1895.

Clinical Microscopy—Reference Handbook of Medical Sciences, Supplement, 1895.

Thymus Gland, Development of—*Ibid.*

Thyroid Gland, Pathology of—*Ibid.*

Biological Analysis of Water—*Ibid.*

Report on a Year's Work on Bacteriological Diagnosis of Diphtheria—MONTREAL MEDICAL JOURNAL, 1896.

On the Application of the Serum Diagnosis in Typhoid Fever—*New York Medical Journal,* 1896.

A Note upon Serum Diagnosis by means of Dried Blood Samples in (Experimental) Cholera—*New York Medical Journal,* 1896.

Ueber den Gebrauch von im Wasser aufgelosten trockenen Blute fur die Serumdiagnose des Typhus—*Centralblatte fue Bakter. Parasit. u. Infekt.* XXI. Band, No. 13/14, 1897.

Three cases Illustrating the Value of Bacteriological Diagnosis of Leprosy for Public Health Purposes—MONTREAL MEDICAL JOURNAL, 1897.

On the Difference between Blood Serum and Blood Solutions, the Condition of the Test Culture and Significance of Bacterium Coli Infection in Relation to Typhoid Diagnosis—MONTREAL MEDICAL JOURNAL, 1897.

On the Iodide Test for Semen—*Boston Medical & Surgical Journal,* 1897.

On the Medico-Legal Application of Entomology—MONTREAL MEDICAL JOURNAL, 1897.

Notes on Household Disinfection by Formaldehyde—*British Medical Journal*, 1897.

An Experiment with the Serum Reaction as a Test for Typhoid infection in Water, etc.—*New York Medical Journal*, 1897.

On the Application of the Serum Diagnosis in Typhoid Fever to the Requirements of Public Health Laboratories—Trans. American Public Health Assoc., 1897.

Compilation of Pathological Reports of Montreal General Hospital from 1883-1895, August, 1897.

The Medico-Legal Significance of the Presence of Sugar and Glycogen in the Liver, Post-mortem—*Boston Medical & Surgical Journal*, 1898.

Cardiac Embolism—MONTREAL MEDICAL JOURNAL, 1898.

The Condition of Test Cultures, especially as regards filtration, favourable to clear Serum Reactions by the Dried Blood Method—*British Medical Journal*, 1898.

On Serum Reaction with Bacteria other than the usual Pathogenic Forms—*British Medical Journal*, 1898.

A Quantitative Method of Serum Diagnosis by means of Dried Blood—*British Medical Journal*, 1898.

Notes on Progress of Legal Medicine—the Medico-Legal Study of Injuries—*Philadelphia Medical Journal*, 1898.

Death by Electricity—MONTREAL MEDICAL JOURNAL, 1898.

Legal Medicine—*American Yearbook of Medicine & Surgery*, 1898.

Recent Work Bearing on the Pathology and Morbid Anatomy of Shock—*The Railway Surgeon*, 1899.

Some Personal Experiences in Disinfection—Trans. American Public Health Assoc., 1900.

On the Practical Clinical Teaching of State Medicine—*Philadelphia Medical Journal*, 1900.

Legal Medicine—*American Yearbook of Medicine & Surgery*, 1900.

On the Estimation of Disability and Disease Due to Injury—Read before Montreal Medico-Chirurgical Society, January, 1900.

On the Establishment of Medico-Legal Diplomas—*Boston Medical & Surgical Journal*, 1901.

A simple Method for Bacteriological Examination of Milk Supplies—MONTREAL MEDICAL JOURNAL, February 1902.

JAMES McGILL.

1744—1813.

Founder of McGill College, from the portrait now in Molson Hall.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXI. AUGUST, 1902. No. 8.

Original Communications.

AN HISTORICAL SKETCH
OF THE
Medical Faculty of McGill University

BY

MAUDE E. ABBOTT, B.A., M.D.,
Assistant Curator, Pathological Museum, McGill University, Montreal.

The Medical Faculty of McGill University is a direct outcome of a teaching body known as the Montreal Medical Institution, which was organized in 1824, by the first medical staff of the Montreal General Hospital, itself established in 1819. In the history of any institution it is often the day of small things, when the foundations of future success are being laid, that most attracts one's interest. And successive epochs in the history of an institution are sometimes marked in an interesting way by the buildings it has occupied. These things are true of the Medical School of McGill University. It was organized to meet a pressing demand by medical men of high professional status, pioneers in their departure. And it was carried on in the earlier years of the century through great difficulties at the cost of much personal labour and sacrifice. The character of its really heroic past lends lustre to the prosperity which the college seems now beginning to enjoy, and any contribution to our knowledge of the early history and of the later movements of the medical schools should be of great interest even to the general reader.

I am greatly indebted to the late Dr. Douglas Brymner and to Mr. Wm. McLennan for much kind assistance in the preparation of the historical portion of this work. And I have to thank Mr. Vaughan, University Secretary, and Dr. R. F. Ruttan, Medical Registrar, for access to the Minute books of the Royal Institution for the Advancement of Learning and of the Governors of the University, and also to the earlier Minutes of the Faculty of Medicine, all of which I have consulted freely in that portion of the work which deals with the college buildings. I have also to thank the Hon. Justice Baby and the Rev. W. S. Barnes, for information kindly given.

For the sake of clearness the facts to be related may be first briefly summarized :—

About the year 1818, the first provision for the sick poor of the Protestant portion of the civic population of Montreal was made. In this year the Female Benevolent Society of Montreal, an Association founded in 1816, which seems to have done active charitable work on a large scale among the poor immigrants of the time, established the "House of Recovery" for the care of the indigent sick. This house had four rooms and was in the Recollêt suburb. Gratuitous medical attendance was given to the patients by Dr. T. P. Blackwood, a retired Army Surgeon. In the following year a larger house having room in it for three wards and 24 patients, situate on Craig Street, was fitted up and given the name of the "Montreal General Hospital." It is said to have been a direct outcome of the small House of Recovery. In the year 1821, the central block of the present Montreal General Hospital was built, and in 1822, active work was begun there, patients, staff and equipments being removed from the house on Craig Street.

The first medical officers of the General Hospital, Drs. Robertson, Stephenson, Holmes, Caldwell and Loedel, seem from the first to have tried to utilize the hospital opportunities for clinical purposes, and in 1824, organized themselves into a teaching body—the Montreal Medical Institution. The first session of this body was held in the academic year 1824-25, at the Institution's rooms on St. James Street.

On the 19th of June, 1829, the Governors of the "Burnside University of McGill College" held their first meeting as a Corporation at Burnside House with the object of organizing the university. It was a condition of the bequest of the late Hon. James McGill that the college must be in operation within a certain number of years after his decease ; failing this, the money and the estate of Burnside, on which the college was to be built, was to pass to the heirs-at-law, the

Desrivières family. To enable this essential condition to be realized, the lecturers of the Montreal Medical Institution, now an active teaching body of established reputation, was "engrafted on" the University of McGill College as its Medical Faculty. This event happened at the meeting of June 29th, 1829, and the first session of the Medical Faculty of McGill University took place in the winter of 1829-30.

The Faculty remained on St. James Street for some years after this event, and then removed to a house on St. George Street, near Craig, where they remained until 1845. From 1845 to 1851, they occupied the central part of the Arts Building, which, with the east wing, was the only portion of the present Arts Building then standing. In 1851, they again returned to the heart of the city, to No. 15 Coté Street. In 1872, the front block of the present Medical Building was erected, and the Faculty returned to the university grounds not to leave them again. The building of 1872, was extended and renovated in 1885, in 1895, and again in 1901, when the present new building was completed.

PART I.

THE RISE OF THE MONTREAL GENERAL HOSPITAL.

1816–1822.

Montreal, in the year 1816 was a thriving little city, a military post, with active commercial and manufacturing interests. Possessed of great natural advantages in its situation at the head of navigation, the depôt of the Great Northwest Fur Company, it was even then a centre of trade with the neighbouring States and with Europe. Travellers of the time speak enthusiastically of its fertility and beauty, and of the enterprise of its inhabitants, as promising it a first place among the emporiums of the world.

The city proper, covered only a space of some 100 acres, lying in an area enclosed by the site of the old walls, McGill Street on the west, Fortification Lane on the north, and what is now Place Viger on the east. But its principal streets ran on to form its suburbs, the Recollêt to the south, Quebec to the north, and St. Lawrence to the west, while St. Lawrence Main Street, long known as "the road to the Country," was built up for a considerable distance to the north. The whole populated area contained some 15,000 inhabitants. Parts of the old walls, although ruinous, were still standing, but were being rapidly removed by the Commissioners appointed for this purpose by an Act of 1801. This Act also provided for the "embellishment, convenience and salubrity of the City" by the laying out of new squares, streets, etc., and perhaps no better idea can be gained of the business enterprise of Montrealers of that day than by reading the description of the projected improvements in the city given by Bouchette, Surveyor-General of Canada, in his Topographical Survey of Lower Canada, published in 1815 (App. i.).

The principal streets, and the only ones as yet lighted by night, were St. Paul, the "bustling business street," and Notre Dame, "more quiet, more genteel and better built;" St. James Street was not yet built up, and along the line of the present Craig Street ran a babbling brook. Well out in the country, about the site of the present Unitarian Church, stood Beaver Hall, the home of Frobisher, of the Northwest Company, while a mile and a half back from the city rose the thickly-wooded mountain, with its cultivated slopes studded by a few country residences, and the imposing "Maison des Prêtres" with its towers towards the west.

Such was Montreal less than one hundred years ago. At this time, little more than fifty years since the Conquest, the city was still quite French in its institutions and its culture. The only places for the care of the sick poor were the Hôtel Dieu for general cases, and the "Grey Nuns" (Les Sœurs Grises), where the mentally afflicted were received. The only facilities for higher scientific study were to be found in the Seminary (Collège de Montréal) of the learned Sulpicians. But the city, fresh from the War of 1812, was alive with the stir and discipline of British military life, and English enterprise and energy, and the attempts to meet the needs of the growing Protestant population made themselves felt on all sides, in educational as well as in philanthropic undertakings. The public spirit of the prominent English-speaking citizens of the time cannot be better illustrated than in the stories of the rise of the Montreal General Hospital and of the origin of McGill University.

Much active charitable work was done at the time in the city. It is to the systematic organized efforts that were made to alleviate the general conditions of the poor, and especially of the distressed immigrants of the time, that the rise of the Montreal General Hospital may be distinctly traced.

The tide of immigration, which had almost ceased during the years 1812-1815 (App. ii.) had set in with renewed vigour after the close of the war. The general prosperity of the inhabitants of the city was somewhat lessened by the distresses that often occurred among the new arrivals. "Every succeeding summer," says a writer of the time, "from the termination of the war in 1815, brought to this country increasing numbers of poor peasantry from England, Scotland and Ireland. Many families embarked from the Mother Country too late to reach the remote situation in the Canadas, where they had friends and relatives previously settled, and on whose alluring promises they had depended when they left the Mother Country. Arrived in Canada and landed at Quebec, they had still (with empty pockets and bodies debilitated by those diseases incident to a long voyage in a crowded vessel) to proceed several hundreds of miles before they could reach the place in which their friends resided. With the season frequently too far advanced for them to take the advantage of a summer conveyance to a place of their ultimate destination, what could they do but endeavour to find employment (such as they, weakened by previous disease, could take) to enable them to live through a long and rigorous winter? Even in this effort they were defeated. The long and arduous winter in Canada puts a stop to the operations of husbandry and to the labours of many outdoor mechanics. A great proportion of these immigrants had been bred as manufacturers, weavers, etc.—a business for which there is no demand in this country. Under such circumstances what could these unfortunate people do? No resource was left to them but a dependence on promiscuous charity; and that source only afforded a scanty and precarious supply, tending to maintain life, but ill calculated to renovate a frame or restore a constitution previously brought down by sickness.

In Lower Canada the French language prevails in the country, of it these immigrants had no knowledge; and hence they were of necessity constrained to reside in the principal points where they spent their first winter, and on these cities the burden of supporting them chiefly fell; and the wretchedness of their condition became most apparent." *

In the year 1817, there was also widespread distress throughout the country from failure of the crops in the summer of 1816; it amounted almost to a famine. It was so severe as to call for immediate assistance from the Provincial Parliament, for in the *Gazette* of January 20th, 1817, the Governor-in-Chief is reported as saying in his opening address that he had been "obliged to make such temporary arrangements as would secure the lower orders from the dreadful effects of famine until the Legislature could be convened." In March of that year an Act for the Relief of the Poor, in the loan of wheat and other seed grain, is reported to have been passed in the Provincial Parliament.

In the *Gazette* of January 27th, 1817, the following announcement occurs:—"*Distress of the Lower Class of the People*: It has been ascertained by gentlemen of the first respectability, who have taken much pains to enquire, that there are no less than 1500 people in the suburbs of this city reduced to actual distress from want of the necessities of life. It is necessary to observe that these are bread and fuel, both of which are at a price beyond the reach of hundreds of families whose delicacy forbids them from making known their urgent need. The distressing scenes in many families are truly heartrending. To alleviate those dreadful sufferings we rejoice to state that J. P. Leprohon and Henry McKenzie, Esquire, are about collecting voluntary subscriptions. It is hoped that the citizens of Montreal will give renewed proofs of their humanity and liberality, by subscribing such sums as their respective situations may admit, for never were the cravings of indigence more acute nor immediate relief more required."

---

* On the Origin and Rise of the Montreal General Hospital, *The Canadian Magazine and Literary Repository*, No. xx , iv., February, 1825.

It was with the object of mitigating conditions such as these that the Female Benevolent Society, to whose small beginnings, such great events have been ascribed, seems to have arisen. The first announcement of this Society appears in the Montreal *Gazette* of February 26th, 1816 (App. iii.) It began with a capital of £150 and had as its first objects the distribution of charity, and the establishment of a school where the children of the poor could be taught that "fear of the Lord, which is the beginning of wisdom, and those habits of industry, order and economy, which will best form them to become useful members of the community."

The claims of the Protestant sick poor seem almost from the first to have pressed themselves upon the Society. In the Montreal *Gazette* of February 24th, 1817, the following interesting announcement occurs:—"Mrs. B. Gibb, as Directress of the Female Benevolent Society, begs leave in the name of that Institution *to return its sincere thanks to the several gentlemen of the Faculty for the gratuitous advice and assistance which they have cheerfully and promptly afforded them when requested by any of its members.* Many distressed objects have been relieved by their timely professional skill who have no other means of expressing their gratitude than by this public acknowledgment: and although it has been deferred, it is hoped that it will not be considered as the less sincere, nor attributed to any intentional neglect.—Montreal, 21st February, 1817."

In the autumn of 1818, £1,200, Halifax currency, was raised by the Protestant clergymen and other philanthropic individuals, to help the immigrants through the coming winter, and these funds were used in establishing a soup-kitchen, the superintendence of which was placed in the hands of the Female Benevolent Society. In following up the cases applying for relief in the enlarged field now offered it, the Society soon found itself crippled by the want of some adequate provision for the sick, and upon its representations the Committee of the Soup-Kitchen joined with its members in renting a small house of four rooms where the more urgent cases of sickness could be cared for.

In the Third Annual Report of the Female Benevolent Society, published in the Montreal *Gazette* of February 17th, 1819 (App. iv.), it is stated: "*Thirty-seven invalids have been received at different periods during the last twelve months in the House of Charity rented in the Recollet suburb.* In this house also the charity school is kept."

By the exertions of Deputy Commissary-General, Sir Isaac Winslow Clarke, a quantity of condemned Barrack bedding was obtained for the little Hospital and the services of Dr. T. P. Blackwood, a retired Army Surgeon, as well as those of other physicians, were secured.

This small beginning was the first step in the establishment of the Montreal General Hospital, in its turn the first link in the chain of events that led to the existence of the McGill Medical Faculty, itself an all important factor in the establishment of the University as a whole. The establishment of the House of Recovery had the most powerful effect, in the words of the writer already quoted: "in promoting the general wish that the great desideratum, a place for the reception of the indigent sick, should be supplied. From the expense of this miniature establishment the managers of it were enabled to estimate the sum requisite for an institution of such an extent as the population of the city required. And although they found at that period no source from which they could expect a fund adequate to this, from the charitable exertions which had been made the previous fall by the citizens, the Committee justly inferred that by an appeal to the feelings of the benevolent through the medium of charity sermons, by subscription lists sent round the city for the same purpose, and other charitable donations they might receive from casual occurrences, they would be enabled to establish and support an hospital upon a more extensive scale than the one then existing. The Protestant clergymen of the city, some of the most eminent medical practitioners, connected with a few of the citizens who had already acted in the establishment of the Soup-Kitchen and House of Recovery, finding their way thus clear for the attainment of their object on a more enlarged scale, hired a house for the purpose in that part of the city called Craig Street. This was soon fitted up with the necessary articles of furniture and an additional quantity of barrack bedding was procured by an application to His Excellency the Governor-in-Chief. This building consisted of three wards capable of containing about 24 patients, and it was so arranged that a nearer approach to a classification of them could be made than in the former very confined building. A meeting of the citizens was called by public advertisement; a committee for managing the institution was appointed; a housekeeper and other attendants engaged; at the same time a certain number of directors or visiting members were chosen, two of whom took the duty of visiting the Hospital in rotation. The medical department was placed under the direction of four professional gentlemen who attended monthly in rotation; one of them at the same time acted as house-surgeon, and attended daily in case of accidents.

This house was prepared for the reception of patients on the 1st of May, 1819, and such as were in the House of Recovery, together with the little property belonging to the establishment were removed into it."

Here, in 1819, to this house on Craig Street with three wards and accommodation for 24 patients, the name of the Montreal General Hospital was first applied, and a table of "Rules and Regulations for the Montreal General Hospital" was first drawn up. Regular Quarterly Reports were given and the Hospital work systematically carried on until May 1st, 1822, when patients, staff and equipments were transferred to the present building then first opened to patients..

In the newspapers of the time one finds many other evidences of the efforts that were being made and the need that was felt for a civic hospital for the Protestant poor, and several doctors of the time announce free dispensary services.

"Mr. Smythe, having relinquished his situation in the Army, respectfully offers his services in medicine and surgery to the inhabitants of Montreal and its vicinity, and hopes by unremitting attention to merit the confidence that may be reposed in him. Advice to the poor every morning from 8 to 9 o'clock at Mr. Mechtler's, next door to Mr. Dillon's, Place d'Armes.

Montreal, 21st June, 1816."

In 1818 this same Andrew Smythe memorialized the Government on the establishment of a charitable hospital as follows:—

To Major Bowles, M.S., &c.:

Sir,—I beg leave to acquaint you for the information of His Grace the Duke of Richmond, that the shortness of his stay here prevented us the honour of personally waiting on him and of stating to His Grace the great inconvenience to which the public of this place must daily submit in cases of poverty and sickness. There is but one religious establishment here by the name of the Hotel Dieu, in which about thirty patients can be admitted and attended by one medical gentleman and the Sisters of the Institution, and another called the Gray Nunnery, where lunatics are received. It is obvious that an hospital like that above mentioned, if managed with all the skill of the most eminent physicians, must be totally inadequate to relieve all the sick poor of Montreal and the vicinity, and the immigrant poor, who are daily sinking under disease arising from climate, poverty and disappointed expectation.

The propriety, therefore, of establishing a public infirmary or general hospital in this growing place for the relief of the sick poor of every nation and religion whom Providence may be pleased to place among us, can no longer admit of doubt. I accordingly pray you to interest His Grace the Duke of Richmond in this act of humanity and to beg his patronage and aid to establish and protect a general hospital in Montreal for the relief of the sick poor of every denomination, to be managed like similar institutions in Great Britain and Ireland. In hope of success I beg of you to leave it to the better judgment of His Grace to recommend voluntary subscription or any other means he may graciously think best to adopt.

Meantime I have the honour to be,
Sir,
Your most obedient Servant,
ANDREW SMYTHE,
Surgeon, &c.

To MAJOR BOWLES,
Military Secretary,
Head Quarters, Quebec.

N.B.—It may be necessary to add that I have professionally served His Majesty upwards of three years in active services, for which I do not at present receive, nor do I ever wish for, fees or reward.

A. SMYTHE.
Montreal, Sept. 20th, 1818.

On October 8th, the following answer was received: —

"His Grace will be very happy to promote an undertaking of this description . . . . a more detailed plan requested.

G. B."

(Canadian Archives, Series C, Vol. 292, p. 100.)

On October 13th, Andrew Smythe again addresses the Duke of Richmond through Major Bowles, elaborating the details of his scheme and enclosing a plan for a hospital to contain 100 patients. (App. iv.).

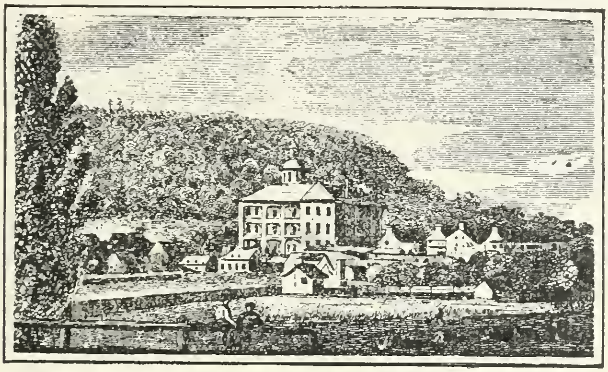
There was opposition too. to the plan. In the *Gazette* of March 13th, 1819, there is reported a debate in the House of Assembly at Quebec on a motion of Mr. Molson, "to resolve that it was necessary to establish a public hospital at Montreal." An Hon. Member, Mr. O'Sullivan, spoke at great length and with much fervor against the motion which seems to have been lost. (App. v.).

There is an editorial comment on this speech in the same *Gazette*, viz. :

"Mr. O'Sullivan's speech in the House of Assembly against establishing a public hospital in this city, will not, we fear, be much admired by the Sons of Æsculapius ; it is, however, fraught with many plausible arguments and the vein of facetiousness and good sense which runs through the whole of it cannot but make it be read with pleasure by every disinterested person. Such an institution as a public hospital will some time or other be needed in this city, but the Hotel Dieu with such an enlargement as mentioned by Mr. O'Sullivan will answer every purpose, it is thought, for some time to come."

The story of the erection of the present Montreal General Hospital, or rather of that part first built, its central block, is one of prompt action and of the same enthusiasm and liberality of the earlier efforts, only on a larger scale. In August, 1820, the ground on which the building stands, situate in the then St. Lawrence suburb, now Dorchester Street, east of St. Lawrence Main, was purchased for the purpose of erecting an hospital upon it by the Hon. Wm. McGillivray, Hon. John Richardson and Samuel Gerrard, Esq. At the first public meeting to discuss the question of further funds, £800 was subscribed on the spot. Other subscriptions quickly followed, and on June 6th, 1821, the corner stone was laid with Masonic ceremonies. On May 1st, 1822, the completed hospital stood open to receive patients, having been built at a cost of £5,856 8s.; £2,167 10s. of which had already been subscribed, the balance remaining as a debt on the building. This debt was only allowed to stand until the following year, when, in May, 1823, it was discharged through the Hon. John Richardson, who, to use his own words, congratulated the Directors and the public of Montreal in thus presenting them with "a splendid building appropriated for the relief of the distressed poor, on such a scale as the population required, free from all encumbrance." (App. vi.)

The Charter of the Hospital was granted in 1823, and its first Medical Staff were Drs. Robertson, Caldwell, Stephenson, Holmes and Henry P. Loedel.



GENERAL HOSPITAL

From Hochelaga Depicta 1830.

It is interesting to note that the Hospital was erected on the site of the "Rédoubt de l'Enfant Jésu," one of the earliest outlying defences of the little town of Ville-Marie.

PART II.

THE ORIGIN OF THE MONTREAL MEDICAL INSTITUTION AND OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

1824-1833.

The condition of the medical profession and the state of education generally in the years immediately preceding the formation of the Montreal Medical Institution and the organization of McGill University, was, like everything else, in a transition state. In 1801 the Royal Institution for the Advancement of Learning, a body with powers to receive and administer monies and to make appointments for educational purposes, was organized. And in the year 1811 the Hon. James McGill, a wealthy merchant of the city, and a member of the Provincial Legislature, had, by his bequest, laid the foundation of the future university. But the nearest approach to higher education in any form then available was a single course of lectures on Natural Philosophy given by the well-known Mr. Alexander Skakel, at his own Grammar School, on St. James Street (App. vii.).

In the year 1788 an "Act to prevent persons practicing Physic and Surgery within the Province of Quebec or Montreal without a license" was passed (App. viii.), and under this Act Boards of District Examiners were appointed yearly for each of the two districts of Quebec and Montreal (App. xii.).

Those physicians and surgeons practicing in the country at this time, who were of good professional status, were either Canadians who had served their apprenticeship with a physician of standing and then gone to the Mother Country for graduation and further study, or they were, as often happened, Englishmen and Scotchmen who had received their entire training at home. Many of these were former Army Surgeons who had found the demand for their medical services in civil life so great that they had retired from active duty and were engaged only in their profession as private practitioners. It is said that "the stamp of Englishmen who thus first practiced medicine in Canada was as good as British education could make it."

On the other hand, as was natural in a country where there was no provision for medical education and where the demand for medical assistance far exceeded the supply, quackery seems to have abounded and flourished. The Rev. Dr. (afterwards Bishop) Strachan writes at this time (speaking, it is true, of the Province of Upper Canada where the law for the examination of licenses is said not to have been enforced), "The Province is overrun with self-made physicians who have no pretentions to knowledge of any kind, and yet there is no profession that requires more extensive information. They comprehend not the nature or causes of disease, are totally ignorant of anatomy, chemistry or botany, and many know nothing of classical learning or general science. Where shall you find one among them attending particularly to the age, constitution and circumstances of his patient, and varying his prescriptions accordingly? It is indeed preposterous to expect judgment and skill, a nice discrimination of disease and a proper method of cure, from men who have never been regularly taught, who cannot pronounce, much less explain, the terms of the art they practice, and who are unable to read the books written on the subject."

In the Kingston *Gazette* of June 2nd, 1812, is published a copy of an account sent to Mrs. John Gould by a self-taught physician:—

"The Estate of Mrs. John Gould, Dr.

To Dr. for medsin and attendants when he was choked with a large peas of Butter no of meat.. . . . . £3.

Some attempt was made in the city to meet the need that seems to have been felt for medical teaching by private lectures. The same Andrew Smythe, whose letters to the Duke of Richmond in 1818 on the establishment of a hospital in Montreal, we have quoted above, advertises in the *Gazette* of Nov. 1817, as follows :—

"*Anatomy & Surgery*: On the 2nd day of January, 1817, Andrew Smythe will begin a course of lectures on Anatomy and the principles and operations of Surgery (at his house, corner St. Gabriel Street), which will be illustrated by a regular series of the finest anatomical preparations.

Montreal, 12th November, 1817."

This announcement continues through many numbers of the *Gazette*.

Among other advertisements of a like nature is one occurring repeatedly of a "Wm. Willcocks Sleigh," which is of interest, because these courses are referred to in the Faculty's Minutes many years later. One of Mr. Sleigh's announcements reads:—

"*Medical Lectures*: Dr. W. Willcocks Sleigh, Member of the Royal College of Surgeons, in London, etc., purposes delivering a course of lectures in this city on Anatomy, Surgery and the Practice of Physics, which will commence at six o'clock on Monday, the 4th day of October. The lectures during the first month will be free to the public; the private course will commence on the first Monday in November, and continue till the month of May.

68 Notre Dame Street, Sept., 4th, 1819."

The Minutes of the Faculty referring to Dr. Sleigh are as follows:—

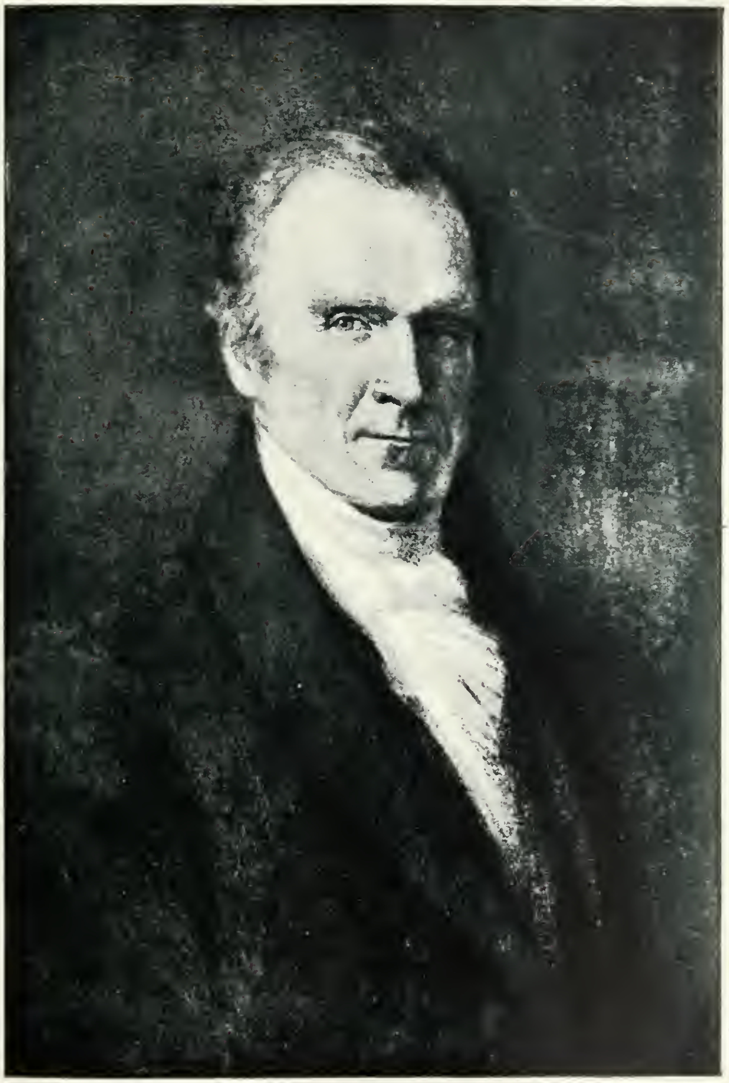
"An application was then received from Dr. Weilbrunner to be allowed to graduate, he being a Provincial Licentiate of 25 years' standing and having, when a student, attended three winter courses of lectures (the only ones then delivered in the country), viz.; during one winter the general course by Dr. Sleigh, and during two others the courses given at the Montreal Medical Institution.

The Faculty passed over the allusion to Dr. Sleigh, but resolved to consider the application of Dr. Weilbrunner on the ground of his attendance at the Montreal Medical Institution, which has already been recognized as equivalent to this school." (App. ix.)

The formation of a medical school was the natural outcome of a general hospital in a rapidly growing city where a real need for medical teaching existed. It was fortunate for the future of the Montreal Medical Institution and of McGill University itself, that the members of the first medical staff of the Montreal General Hospital were men of character, ability and promise. Dr. Wm. Robertson and Dr. Wm. Caldwell were British military surgeons of established reputation and experience, Dr. Holmes and Dr. Stephenson were young Canadians, graduates of Edinburgh University and further qualified by courses of foreign study. The latter success of the undertaking may be largely ascribed to their unflagging enthusiasm. Dr. Henry P. Loedel, though connected with the institution in its infancy, resigned before active work was begun.

The initiative in teaching at the Montreal General Hospital seems to have been taken by Dr. Stephenson (App. xv.), for, in the Hospital Minutes bearing date August 6th, 1822, the year the present Hospital building was opened to patients, there is the entry, "That Dr. Stephenson be allowed to put in his advertisement for lectures, that they will be given next winter at the Montreal General Hospital."

The first public announcement appears in the Montreal *Gazette* of



WILLIAM ROBERTSON,

1784-1844.

First Professor in the Medical Faculty of McGill University, from the painting now in the Faculty Room.

August 9th, 1822. It also speaks of Dr. Stephenson only and reads as follows :—

"*Medical Lectures at the Montreal General Hospital.*"

Dr. Stephenson will commence on the first Monday of October a course of lectures on Anatomy and Physiology, and on the first of March next a course of lectures on Surgery. On the 15th of October Practical Anatomy commences.

N.B.—It is in contemplation to give during the 12 months, lectures on other branches of the profession. For fuller particulars apply to Dr. Stephenson at the house adjoining the hospital.

Montreal, 9th August, 1822."

On Wednesday, October 2nd, appears the following:—

"*Montreal General Hospital* : An introductory lecture to those advertised to be given at the Montreal General Hospital, will be delivered by Dr. Stephenson on Monday the 7th of October, 1822, at one o'clock p.m., in the Committee Room of the Institution.

Montreal, 28th September, 1822.

On October 12th, 1822, appears with the advertisement of Dr. Skakel's lectures on Natural Philosophy and Chemistry, the following announcement of Dr. Holmes' first lectures held at Dr. Skakel's house :—

"Dr. Holmes will commençe his course of experimental lectures on Chemistry, on Saturday the 14th of December, at 7 o'clock in the evening and continue them weekly through the winter terms. For the course—2 guineas or 5 shillings for single lecture."

The Minute Book of the Montreal Medical Institution shows that the first meeting of the Hospital Medical Staff "to consider the expediency of establishing a medical school" was held October 20th, 1823. At this meeting Drs. Holmes and Stephenson were appointed a committee to draw up in due form the reasons for the step. The document prepared by them setting forth the inadequacy of medical skill in Lower Canada, the demand among students for a medical education in this country, and the good opportunities afforded by the Montreal General Hospital, was approved at the next meeting of the Hospital Medical Board and was sent to His Excellency the Earl of Dalhousie, Governor-in-Chief, for his consideration. A letter was also written to him by Dr. Wm. Robertson suggesting the propriety of remodelling the Board of Examiners of the District of Montreal so that it should consist of the Medical Officers of the Montreal General Hospital.

Lord Dalhousie expressed his approval of and interest in the scheme, and after some discussion by correspondence, the request concerning the remodelling of the Board of Examiners was also granted. On the 28th of February, 1823, a Royal Commission was given appointing Wm. Robertson, Wm. Caldwell, A. F. Holmes and H. P. Loedel, Medical Examiners for the District of Montreal.

The Board of Examiners for the District of Montreal in the previous year (App. xii.) had consisted of Dr. D. Arnoldi, (Dr. Holmes' friend and teacher), Dr. Henry Loedel (App., xi.) (father of Henry P. Loedel) and Dr. Wm. Robertson himself. It is thus more than probable that the change in the personnel of the Board would have taken place with the full co-operation of these retiring members.

During the ensuing year the membership of the Institution was altered by the appointment of Dr. Wm. Lyons in place of Dr. Henry P. Loedel, resigned. Dr. Robertson was appointed Treasurer and Dr. Stephenson Secretary. A Medical Library was organized and regular courses of lectures were first begun Nov. 10th, 1824, at the "House of the Institution" No. 20 St. James Street, the first announcement of lectures reading as follows :—

Principles and Practice of Medicine—Dr. Caldwell.
Surgery, Anatomy and Physiology—Dr. Stephenson.
Midwifery and Diseases of Children—Dr. Robertson.
Chemistry, Pharmacy and Materia Medica—Dr. Holmes. (App. xvi).

Once established, the Montreal Medical Institution seems to have worked its way on quietly, winning good repute, until 1829, which marks an epoch in its history, for in this year it became "engrafted upon" McGill University as its Medical Faculty.

This University founded by the will of the Hon. James McGill (App. xiv.), did not come into actual operation for many years, in spite of the need that was felt for such an educational institution among the English-speaking population. The bequest, which consisted of £10,000 and the estate of Burnside, was left in trust for a college to the Royal Institution for the Advancement of Learning, a body contemplated by a Provincial Act of 1801, (App., xiii.), but which was not incorporated and therefore not able to hold property until the year 1818. This circumstance, combined with an almost total lack of funds in the institution, delayed action. And delay was further occasioned by protracted litigation over the bequest with François Desrivières, the heir-at-law of Mr. McGill's estate. Indeed, had it not been for the far-seeing condition of the bequest, that the legacy should revert to certain persons, unless a university were established

DR. JOHN STEPHENSON.

First Registrar, 1829–1842. From the painting now in the Faculty Room.

within ten years of the testator's decease, it is more than probable that the project would have been indefinitely delayed.

James McGill died in 1813. In 1818 the Royal Institution was incorporated. In 1821 the University received its Charter, and in 1823 it became necessary to appoint a teaching staff in order that the condition of the bequest might be fulfilled.

These appointments, which were purely nominal, were as follows:—

Professors, etc. Appointed 1823.

Principal and Professor of Divinity, the Rev. G. J. Mountain, D.D. (of the University of Cambridge); Professor of Moral Philosophy and Learned Languages—the Rev. J. L. Mills, D.D. (Univ. of Oxford); Professor of History and Civil Law—the Rev. J. Strachan, D.D. (Univ. of Aberdeen); Professor of Mathematics and Natural Philosophy—Rev. J. Wilson, A.M. (Univ. of Oxford); Professor of Medicine—Thos. Fargues, M.D. (Univ. of Edinburgh).

Of Dr. Thos. Fargues, Professor of Medicine, we learn that he was a graduate of Edinburgh of high standing, and that he lived and practiced, not in Montreal, but in the City of Quebec, and did no teaching in the University. His name appears in Neilson's Almanacs from 1817 to 1834, as one of the Examiners for the District of Quebec. In 1821 he was President of the Vaccine Board, and he was for many years attending physician and later consulting physician to the Hôtel Dieu de Québec.

In the year 1829, that portion of the lawsuit which referred to the bequest of the landed estate of Burnside was decided in favour of the University, but the question of the £10,000 continued unsettled for many years longer, and no funds were at the disposal of the College. Yet it was felt that, to fulfil the conditions of the will, actual teaching must now be done in the University and the purely nominal appointments of 1823 be refilled or supplemented.

At this time the eyes of the Royal Institution and of the friends of education were turned upon the Montreal Medical Institution, now an active teaching body of established reputation, and it was decided to bridge the difficulty by making this body the Medical Faculty of the University, its officers becoming Professors or Lecturers in their respective branches.

On June 29th, 1829, the first meeting of the Governors of "Burnside University of McGill College" was called at Burnside House, which had just come into the hands of the Royal Institution under the will. This meeting had as its object the promulgation of the Charter and the inauguration of the university. It was largely attended by representative citizens of all classes, and at this meeting the members of the Montreal Medical Institution, who had been invited to be present, were formally "engrafted upon" the University of McGill College as its Medical Faculty. The report of the interesting meeting given at full length in the Governor's Minute Book (App., xvii.), closes as follows:—

> "The public business having been closed, the Governors of the Corporation held an interview with the members of the Montreal Medical Institution, who had been requested to attend the meeting for that purpose. During this interview it was resolved by the Governors of the Corporation that the members of the Montreal Medical Institution (Dr. Caldwell, Dr. Stephenson, Dr. Robertson, Dr. Holmes), be engrafted upon the college as its Medical Faculty, it being understood and agreed upon by and between the said contracting parties that until the powers of the charter would be altered, one of their number only should be university professor and the other lecturers. That they should immediately enter upon the duties of their respective offices. All of which arrangements were agreed to."
>
> 29th June, 1829.

The Montreal Medical Institution, as it still continued to be called for some years, was now a Faculty of an established University capable of granting degrees. For some years the only active work done in the University was that in this Faculty, and by its simply fulfilling the time limit of the will, it may justly be said to have saved the University, at least from much involved and tedious litigation, if indeed it did not preserve for it the bequest itself. The first University degree was granted in 1833, in medicine, to Mr. W. Logie. The original draft of this and two other certificates for Mr. Logie in Dr. Wm. Robertson's handwriting, lies in the McGill Medical Library and read as follows :—

DEGREE.

DOCTOR IN MEDICINE AND SURGERY.

> We, the undersigned, Principal and Professors of the University of McGill College, do hereby certify that Mr. William L. Logie, of the City of Montreal, having been deliberately examined on the different branches of science connected with Medicine and Surgery, and having satisfactorily defended before the Medical Faculty, his inaugural dissertation on Croup, is, in conformity with the statutes, rules and ordinances of the said College, declared Doctor in Medicine and Surgery, fit and qualified to practice medicine and surgery in all their branches.
>
> We therefore admit him to be a *Graduate* of this University and authorize him accordingly to practice medicine and surgery.
>
> In witness whereof, we have hereunto subscribed our names and affixed the seal of the College at the University of McGill College, the 24th day of May, in the year of our Lord one thousand eight hundred and thirty-three.

DR. ANDREW F. HOLMES.

First Dean of the Faculty, 1854. From the painting now in the Faculty Room.

Montreal, 20th March, 1833.

I do hereby certify that Mr. William L. Logie attended during five successive years the different lectures delivered by the Medical Faculty of the University of McGill College, the Medical and Surgical Practice of the Montreal General Hospital and Practical Anatomy, all as required by the statutes, rules and ordinances of the said University, entitling him to present himself as a candidate for the degree of doctor in Medicine and Surgery.

(Signed) J. STEPHENSON,
Secretary Medical Faculty.

Montreal, 23rd March, 1833.

This certifies that Mr. William Logie studied under me as an indentured apprentice, the different branches of medical and surgical science, during five successive years.

(Signed) W. ROBERTSON.

The opening words of the address given by Dr. Wm. Robertson at this first convocation, are historic and may fitly close this sketch.

" Conferring the first degree by a legally established medical school forms an interesting era in the medical history of the province. Although the country has been settled upwards of two centuries, no institution has existed for the education of physicians until within the last few years; and as a natural consequence of such a state few scientific practitioners were to be found except such as went to Europe to complete their education or emigrated to this country from other parts of the Empire or from foreign countries. A majority of these settled in the principal towns and villages, while the great mass of the inhabitants of the country were compelled to employ those who were less qualified to administer medical aid. The limited means of a great majority of the settled inhabitants of the colony are such that, however much they may be disposed, they cannot afford the necessary expenses which a medical education abroad requires.

The professional information acquired by a young man during a few years' study in the country is very limited, he has seen the diseases of a small district for a few years ; his knowledge of anatomy is derived from books, or it may be from the examination of a skeleton; he has probably attended a few surgical operations; his range of medicine is confined to such as his instructor prescribed. A person thus prepared when he enters on even the common routine of practice must frequently be embarrassed and encounter difficulties, which he may not always overcome with safety to his patients.

Experience has taught mankind that the elements of science are better inculcated by public lectures than by any other method, and we find that from the earliest ages this mode of instruction has been followed by all nations in making their youth acquainted with the arts and sciences. The Hindoo, Brahmin, the Celtic Druid, the German Philosophers and the Professors of modern universities and colleges, all adopted the same plan of oral instruction, although somewhat modified. Public lectures abridge the labours of the student by directing his energies to the acquisition of what is really useful and, in addition to the knowledge which he acquires from his immediate attendance, the proper sources of correct information and the best authorities are pointed out to him. In this way the principles of his particular pursuit or profession are more effectually impressed upon his memory than by the most assiduous and extensive course of private studies.

The Medical Officers at the M. G. H., sensible of the difficulties under which the medical students in this Province labour and being desirous of affording them all the advantages resulting from academical and clinical instruction, held a meeting in 1823, to consider of the expediency of establishing a medical school in this city, and as a first step adopted to obtain this object may be interesting, I shall read the Minutes of the Medical Board of the Hospital connected with the same.

* * * * * * * * * *

I have received through the courtesy of Dr. John Racey of Johnville, the following information about his father Dr. John Racey, who received his early training in the Montreal Medical Institution and was on the staff of the Medical Faculty of McGill University from 1833-1835.

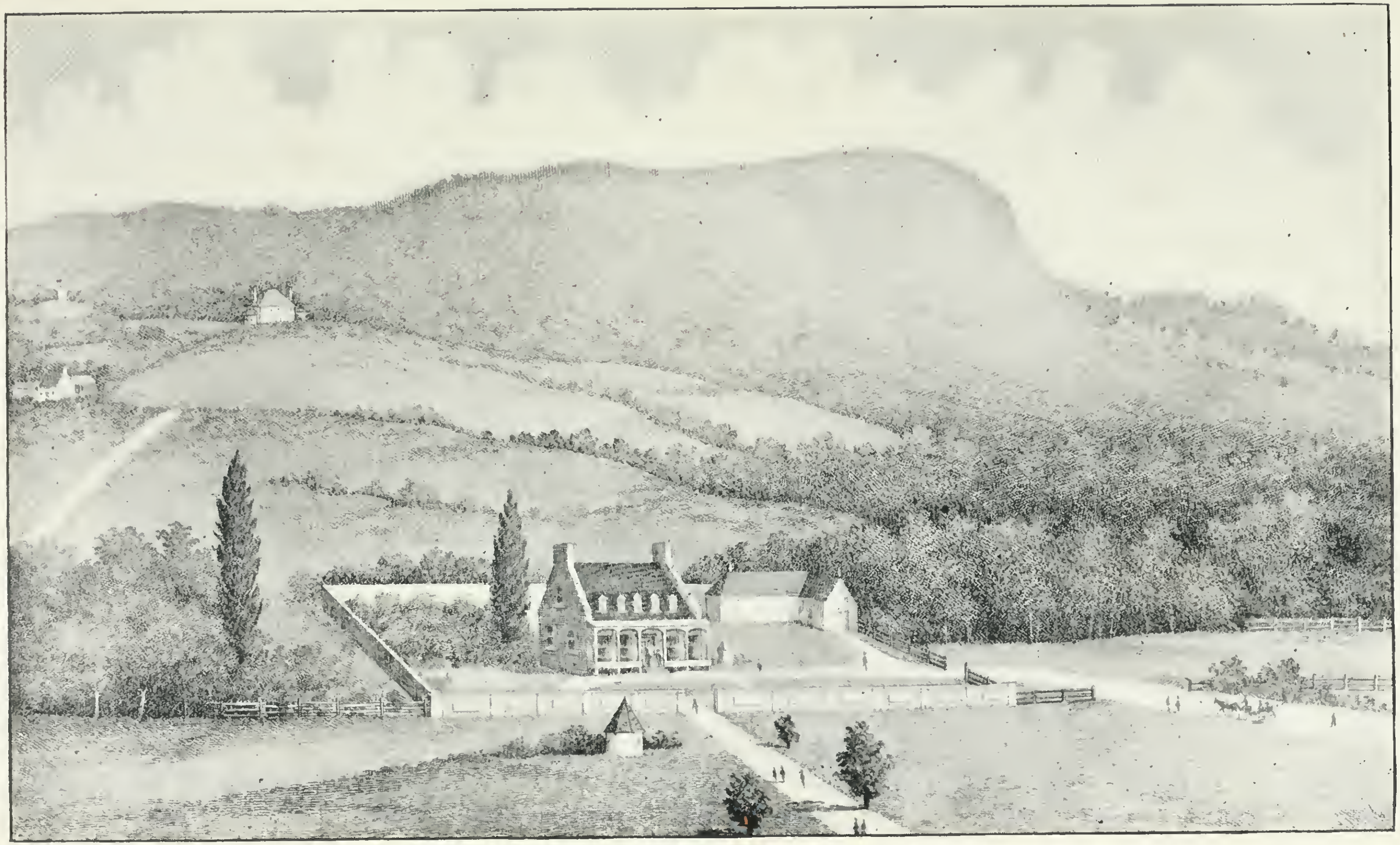
" Dr. John Racey was born in Quebec, 24th March, 1809. He attended Dr. Wilkie's school in Quebec and subsequently that of the Rev. Mr. Esson's and the Rev. Mr. Urquhart in Montreal. He began the study of medicine under the late Dr. Caldwell of Montreal, proceeding thence in September 1829 to Edinburgh for the further prosecution of his studies at the university in that city, and also went to Paris for the same purpose. He was admitted as a member of the College of Surgeons, Edinburgh, 1st June, 1830.

Cholera having broken out in Scotland in 1831-1832, Dr. Racey was appointed House Physician to the Cholera Hospital in Edinburgh, and received the thanks of the Governors of that Hospital for his assiduous attention, kindness and skill displayed while occupying that position.

He obtained his degree of M.D. of the University of Edinburgh, 2nd July, 1832, having passed his examinations with honors, and returned to Quebec the same year.

He removed to Montreal during the winter of 1832-1833, where he began his career under propitious circumstances, being favorably known from his excellent character while a student of medicine. A vacancy having occurred in that city owing to the death of Dr. Caldwell, he was appointed one of the visiting physicians of the Montreal General Hospital, and was also chosen Professor of Anatomy and Surgery to McGill College, two appointments highly favorable and flattering to so young a man (I was informed many years ago on reliable authority that Dr. Caldwell was anxious to keep up McGill College as a medical school and that he, and I think that Dr. Holmes' name was also mentioned in connection with his, was desirous of doing so, for if such a

DR. GEORGE W. CAMPBELL (Dean 1860—1882).



Burnside House, the country residence of James McGill and the place where the first meeting of the Governors of McGill University was held. It stood at about the site of the corner of the present Burnside Place and McGill College Avenue.

From a Water Color Sketch by W. B. Lambe, Esq., in 1842.

course had not been followed it was believed that the McGill bequest towards the foundation of the College would have reverted to the heirs McGill).

On the 1st June, 1833, Dr. Racey married Miss Susannah Withington Wise, by whom he had five children. In the autumn of 1835, owing to the wishes or persuasions of his parents, he returned to Quebec, where he practiced his profession until 1847. In 1846, he entered into partnership with the late Dr. James Douglas.

During the summer of 1847, typhus fever was brought to Quebec by the Irish immigrants, therefore an Emigrant Fever Hospital was built which was intended to contain about 350 patients, but soon being filled to overflowing, the number of cases being increased to over 1100, temporary sheds were erected near it and buildings reared on the Beauport road to be used as hospitals. Dr. Racey was appointed one of the medical attendants to these hospitals and in the early part of October, when the fever was declining he was attacked by the disease and succumbed to it on the 25th October, 1847."*

---

* In the University Calendar John Racey is stated to have filled the chair of Midwifery from 1833-1835 ; but there is no mention of him as filling the chairs of either Anatomy or Surgery. It is possible that he may have taught in these departments without holding the appointment of full Professor.

PART III.

THE BUILDINGS OCCUPIED BY THE MEDICAL SCHOOL.

1824-1901.

The first lectures of the Montreal Medical Institution were given, according to its Minutes and to its first public announcement, at " the House of the Institution, No. 20 St. James Street.

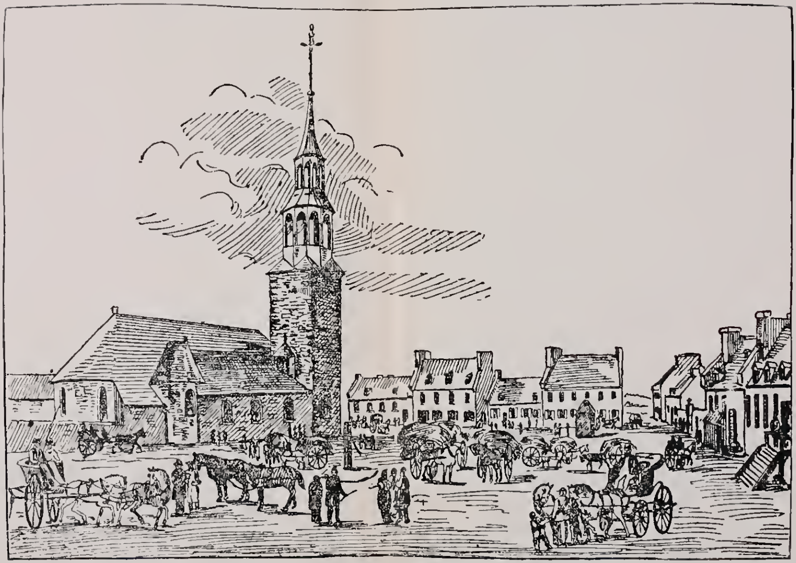
From a comparison of the first Montreal Directory, published in 1819 (and not continued until 1842), with maps of the city at this time, No. 20 St. James Street, in 1824, would appear to have been situate on the northwest side of St. James Street to the east of Place d'Armes. Several historical sketches of the Faculty, however, state that the first lectures were given in "a small wooden building, situate on Place d'Armes on the site of the present Bank of Montreal." There would appear to be a discrepancy in this statement; first. because No. 20 from the Directory of 1819, seems to have lain further east than Place d'Armes, and secondly, because the present site of the Bank of Montreal was occupied in the year 1819 by an unused cemetery and the only houses standing upon it were a small mortuary chapel and the beadle's house. It is possible, however, that the statement may have had reference to the location of the school a few years later. The first lot west of the unused cemetery, was occupied in the year 1833, and probably earlier, by a narrow three storey building in which there is reason to think lectures were given in the early. although not in the first, years of the Montreal Medical Institution.

It was fitting that the pioneer work in what was later to be the active agent in a future great university should have been carried on in a spot of such historic interest as old Place d'Armes.

Upon the plans of 1758 and 1803, published with this, I have written the numbers of the lots as found in the " Terrier " of the Seminary of St. Sulpice, the Seigniors of Montreal. In these books the changes in ownership of each lot has been given so long as it was subject to seignorial dues, and its location can thus be determined.

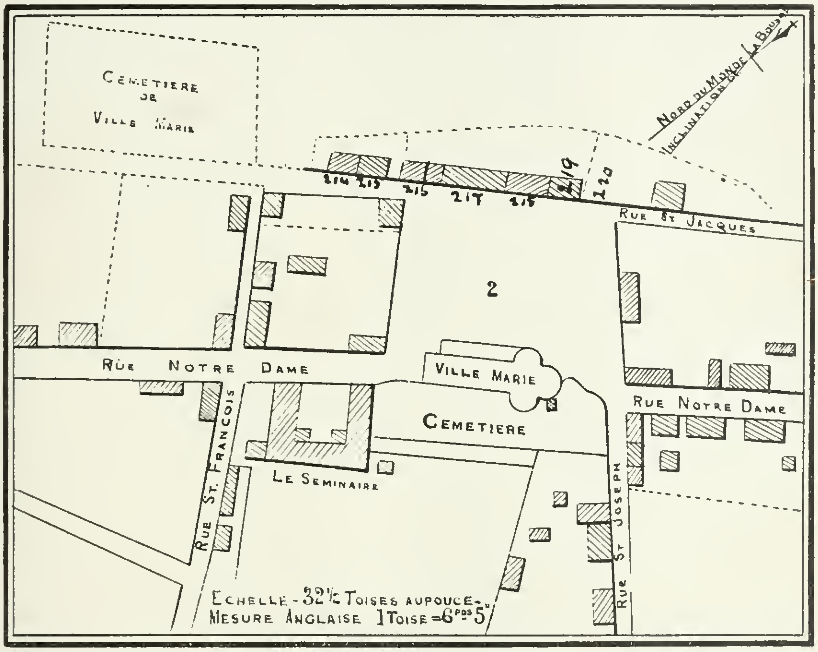
In the plan of 1800, the cemetery as the site of the Bank of Montreal, is clearly established. It was still there in 1824. but just to the west of it the street had then been widened, and the old Bank of Montreal stood on the corner of St. François Xavier Street, farther back than the line indicated in the plan of 1800.

PLACE D'ARMES IN 1807.—The old cemetery on the site of the present Bank of Montreal is seen. The house next to it that occupied by Dr. Henry Loedel.


Parish Church.
Tower End toward Notre Dame street
Old Pump.
1838. Campbell, dry goods. 1896. Royal Insur. Co.
1837. Dougald Stewart. 1852. "Pilot" Office. 1863. Ontario Bank.
1782. Toupin. 1830. Hilton & Baird. 1896. Mutual Reserve Life Ins. Co.
1790. Richard Dillon. 1856. Compain's 1896. Liverpool London & Globe.
St. James street 14 feet wide. Post Office.
1651. Old Cemetery. 1896. Montreal Bank.
1819. Dr. Henry Loedel.
1782. Ignace Dubois 1841. City Bank 1896. Imperial Building

The occupancy of the lots along the St. James Street side of Place d'Armes in 1825, was as follows, using the Seminary numbers and beginning from the eastern corner of St. François Xavier Streets. Lot 214, 215 (site of the present Post Office) were occupied by the old Bank of Montreal, the number of which is given in the Directory of 1819, as 34 St. Jacques Street.

Lot 216 (also part of the site of the present Post Office), the front portion included in the widening of St. James Street, the rear in the plan of 1803 was a vacant lot. Later, somewhere about 1830, *a narrow three story building was erected* on this lot, which seems to have been the home of the medical school for some years.



Plan of Place d'Armes in 1758. Lot 217 is the site of the present Bank of Montreal.

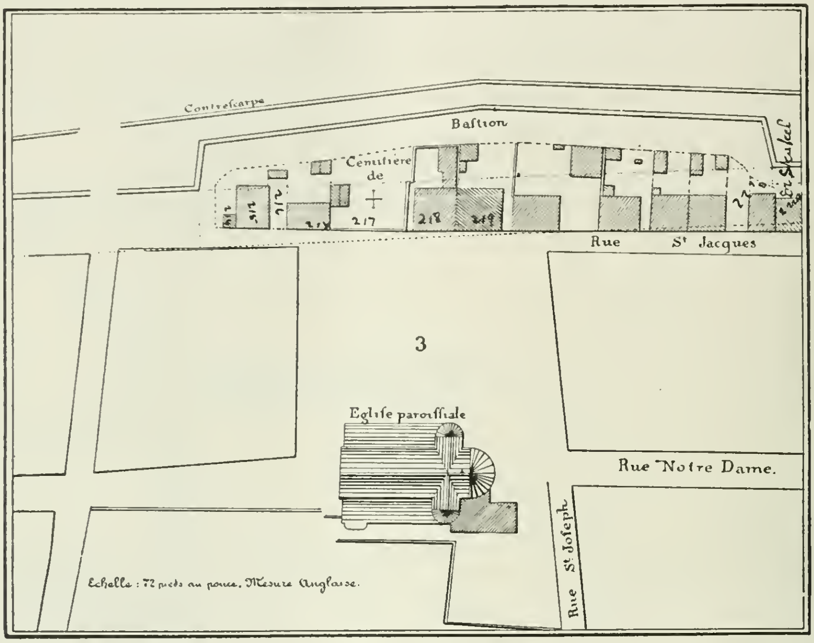
Lot 217 (the site of the present Bank of Montreal), was the cemetery with the mortuary chapel and the beadle's house. This lot was the property of the "Fabrique de Montréal" at this time and was sold in 1845 to the Bank of Montreal.

Lot 218, the house of Dr. Henry Loedel, father of the Henry P. Loedel of the first medical staff of the Montreal General Hospital (App. xi.), No. 31 in the Directory of 1819.

Lot. 222. The house of Dr. Skakel, No. 27 in the Directory of 1819.

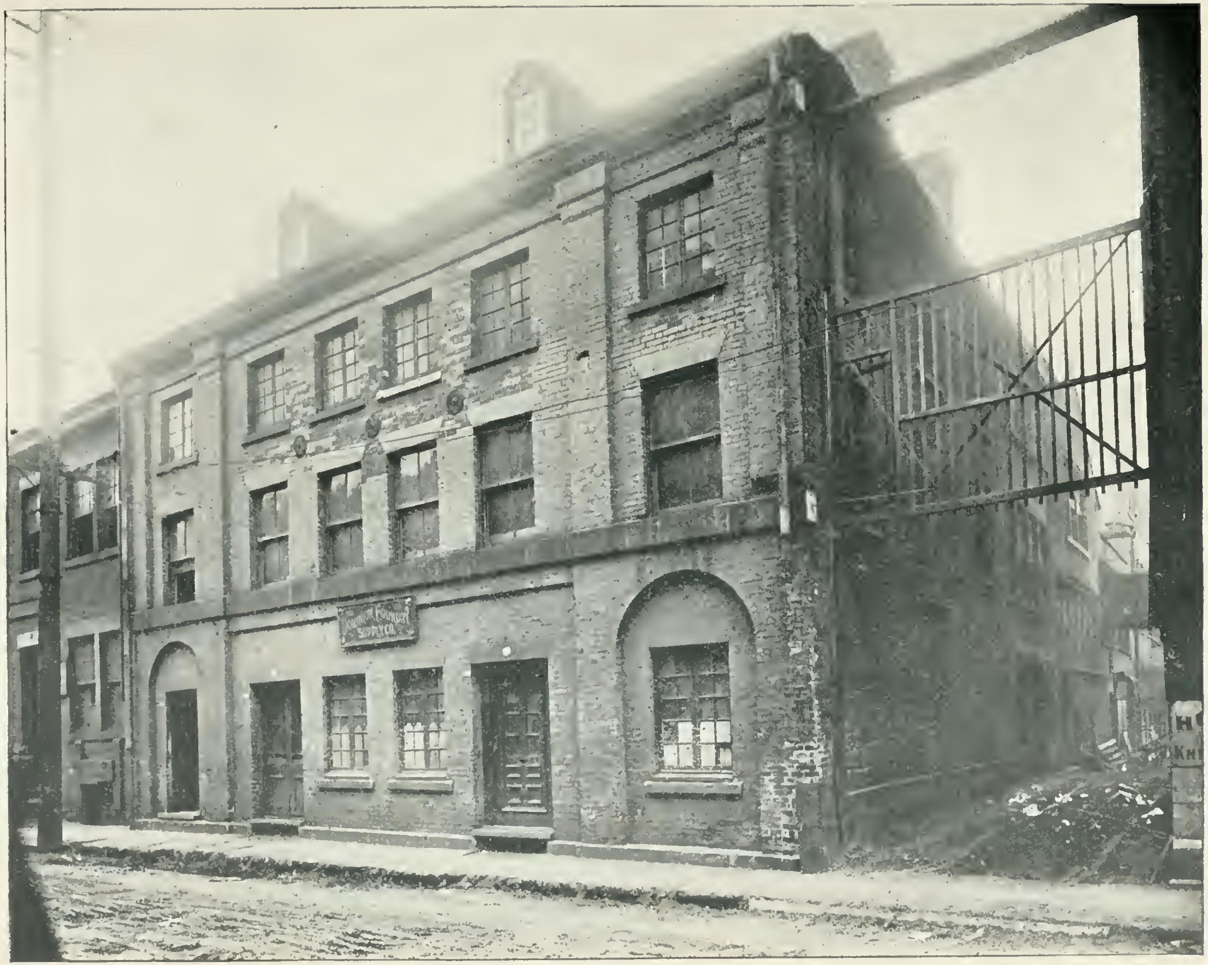
From the numbers of these lots it will be seen that No. 20 St. James Street, the first "House of the Institution," must have been east of Dr. Skakel's.

It may be added that Dr. Arnoldi's house stood at the east corner, now part of the site of New York Life Company's building.



Plan of Place d'Armes about 1800. The cemetery on the site of the present Bank (lot 217) is seen.

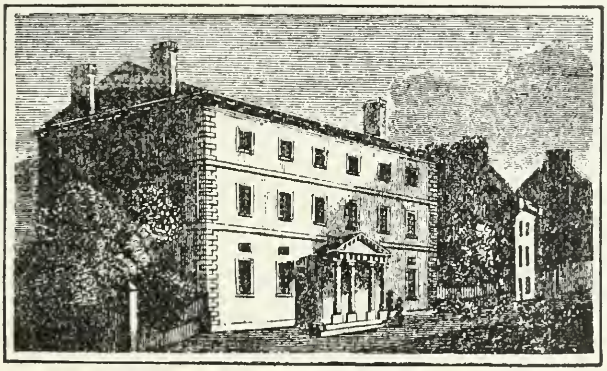
There is no record of the Faculty's doings from the close of the Minutes of the Montreal Medical Institution in 1824, until the year 1842. Some time before 1833, the school seems to have been removed from No. 20 St. James Street to the tall narrow three storey building which stood between the old Bank of Montreal and the cemetery. Dr. Arthur Fisher, the only person now surviving who was in the College while it was on Place d'Armes, narrates that in the winter of 1833-1834 he was a student in the McGill Medical Faculty, then occupying a narrow three storey building next to the old Bank of Montreal on Place d'Armes. The Hon. Justice Baby, well known as an antiquarian, also told me that he remembers this building as a "sort of medical museum" in which medical lectures were given.



House on St. George Street occupied by Medical School 1841-1845.

The next move of the school was to St. George's Street. The Minutes in possession of the Faculty began again on February 12th, 1841. The Faculty occupied at this time a three storey brick building on the west side of St. George's Street, three doors above Craig. This house is still standing and is now the property of the Estate of the late Mr. Warden King. Dr. Wm. Wright, Emeritus Professor of Materia Medica has kindly sent me the following statement about it:—

"In the year 1843, the lectures were delivered in St. George's Street, the first large yellowish-looking building on the left hand side as one turned up from Craig Street. There were two lecture rooms, one for Anatomy, the other for the other branches; a large upstairs place for dissection and a small bit of a room for pathological preparations, of which there were very very few, preserved in weak pyrolignous acid in square colored bottles closed by cork bungs, all under the care of Dr. Arthur Fisher. The property belonged to Mr. Leclaire and Mr. Jordan was his agent. There also, some 6 years afterwards, the Montreal Dispensary was started."



BANK OF MONTREAL.

The Old Bank of Montreal. The building next to it may have been that occupied by the Montreal Medical School.

Between the years 1837 and 1839, during the disturbances caused by the Rebellion, lectures stopped; so it is probable that the occupation of the house on St. George's Street may have taken place in 1840; at all events we find the school there established in 1842.

An examination of the Minutes show that the accommodation afforded by the St. George's Street School was from the first unsatisfactory. But the question of ways and means was one of paramount importance at this time. On September 13th, 1844, the Faculty petitioned the Governors of McGill College for a site within the University property. And on May 5th, 1845, the Secretary writes to the Secretary of the

Montreal General Hospital offering terms for the purchase of one-third of the lot adjoining the Hospital.

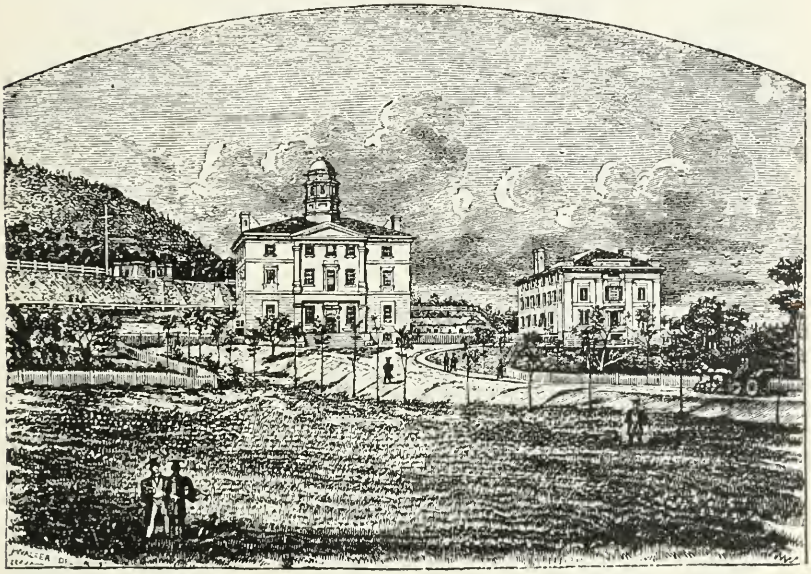
On July 12th, 1845, the Royal Institution informed the Medical Faculty of their intention to reserve a suitable lot of ground for the Medical Faculty and if the funds of the College permitted, to defray the expense of the erecting of a building upon it.

" Whereupon it was Resolved that the Secretary be requested to endeavour to show the Royal Institution that it was of much importance that the lot be granted at once."

At the next meeting of the Faculty, however, a suggestion to occupy the newly erected College buildings was made. After some discussion of conditions with the Governors, it was decided not to await the pleasure of the Royal Institution in the matter of a building lot, but to accept the offer of the Governors and use their Arts Building *during the ensuing session 1845-1846.* This was done.

The erection of the Central Arts Building with the east wing, which were the first of the present college buildings, was completed about 1842, (App. xiv.). The Principal and the Secretary were in residence there but the buildings were otherwise little used and naturally seemed to meet the demand for increased accommodation made by the Medical Faculty, although its long distance from the city, the hospital and the students' residences formed a serious obstacle to its occupancy. The inconvenient situation far out in the country, and also the unsuitable way in which the building was laid out for a medical school, made themselves more and more felt as time went on. At that time the chief meal of the day came at noon and the visit at the hospital was at the same hour. A lecture at the college ending at 12 o'clock, a rush through the quite untravelled winter snow and a vain attempt at dinner to attend a one o'clock clinic was a daily trial even to the bravest. Already in the autumn of 1846 we find Dr. Archibald Hall asking permission to give his lectures in town in a room hired at his own expense, this arrangement being more advantageous both for himself and his students. On March 19th, 1847, the students set forth the disadvantages of the location in a petition in which they asked that lectures be given in town. Complaints were also made about the want of facilities for dissection in the college building. No action was taken at this time and matters dragged on until the spring of 1851, when the St. Lawrence School of Medicine, with a strong teaching staff and a locale in the city, was organized. The McGill School now decided to return to the city at any effort, rather than to risk this competition under such disadvantages as the out-of-the-way situation in the University grounds presented, and on July 16th, 1851, the arrangements were made for erecting a building in town before the beginning of the next winter session. The Minute reads as follows :—

“July 16th, 1851 :—The question of the expediency of procuring a lecture house within the city having been brought before the meeting, and various plans of arrangement having been discussed, it was resolved as the most eligible that a house adapted for the different purpose of the Faculty should be built, provided any members would undertake the responsibility of building, and subsequently receive the Faculty as tenants.



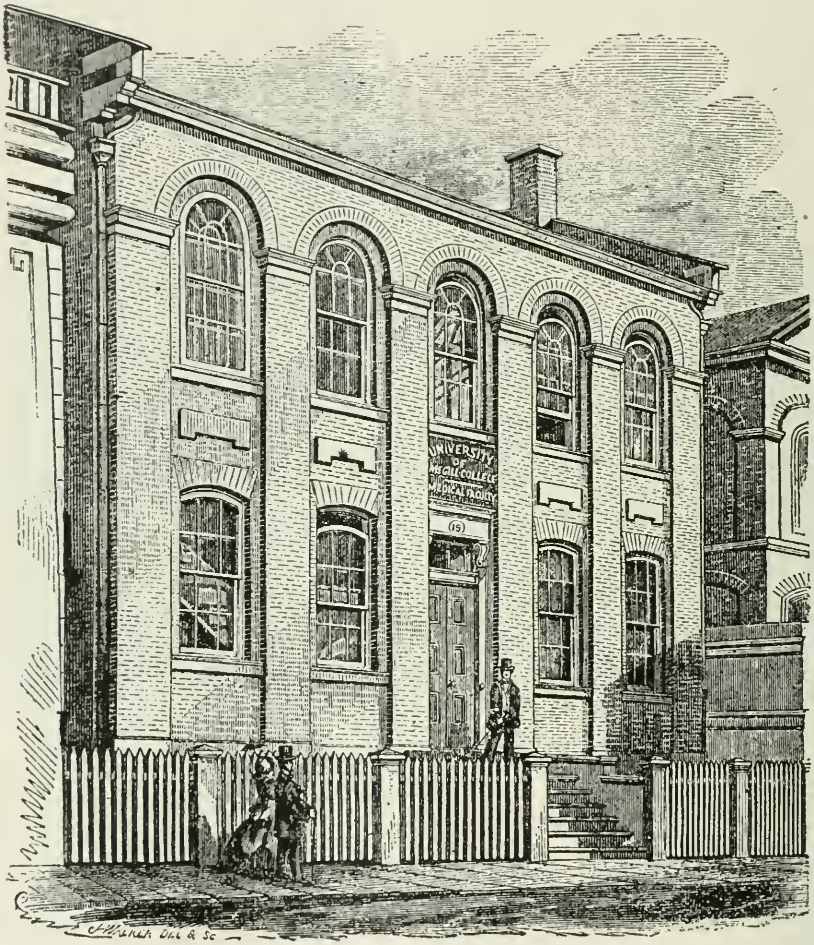
The first Arts University Buildings erected 1843. Occupied by the Medical Faculty 1845-1851.

Whereupon *Drs. Campbell, McCulloch and Sutherland* undertook to erect such a building agreeing to the following conditions :—

1. That the rent should be at the rate of 10 per cent. on the outlay and in no case to exceed £100 per annum, and for five years.
2. That the Faculty should pay assessments.
3. That gas and water pipes should be introduced by the builders.

On these terms then, at the private expense of three members of the Faculty, a lot of ground was bought on the east side of Coté Street and a brick building, No. 15 Coté Street, erected upon it in time for the session 1851-52. In this building (enlarged in 1860), the school remained until 1872, and here, during these 21 years, in an unbroken circle of steady work and of gradual progress, the foundation of its present era of comparative prosperity was laid. Here in 1853, all the lecturers of the Faculty were appointed Professors and here in 1854, Dr. Holmes became its first Dean. New appointments were made, new courses and a summer session instituted, and the number of students, 69 in 1851-52, rose to 184 in the session 1866-67.

The Coté Street building, at first large enough to meet all demands, soon required extension, and in 1857 we find Dr. Holmes, on behalf of the Faculty, memorializing the Governors for an additional grant of £200 for the express purpose of equipping and enlarging the museum and library by the addition of another room. Dr. Campbell at the same time explained to the Governors the tenure of the building of which he was one of the proprietors, stating that they would be


UNIVERSITY OF McGILL COLLEGE MEDICAL FACULTY
15
J. Walker Del. & Sc

The Coté Street Building, occupied 1851-1872.

willing to sell it to the Governors for £1,200, the sum it had cost them; although the city property had risen much in value in that time, in view of the fact that increased accommodation was needed in the building and that the proprietors did not see their way to any further expense. This suggestion, which was made again in 1858, was not agreed to by the Governors until 1860, when they took over the building and made the improvements required, spending, as seen from a statement of the year 1861, the sum of £9,360, £1,200 of which was paid to the proprietors in purchase of the building and the balance on the extensive enlargements made in the year 1860.

The migration from the university grounds to Coté Street, involving as it must have done increased expenditure in rental, etc., seems to have taken place against the wishes of the University authorities, and the request now being made for substantial aid in the extensions contemplated of the Coté Street building, had been met by repeated suggestions to return to the Centre Arts Building. But the Faculty knew from experience its disadvantages and consistently refused to remove from their central position near the Hospital, until such time as the growth of the city to the west made a return to the University grounds a suitable measure. Dr. Holmes concludes his letter of July 23rd, 1857, in which he asks for the grant of £200 for the museum, as follows :—

"The Faculty have heard of your disposition to erect for their accommodation a house at or near Burnside, but they would assure you that until the city undergoes great additions and considerable deviations from its present arrangement, such a situation would be positively deleterious to their interests, from tending to lessen the attendance upon their classes and proving most inconvenient for the earlier lectures of the morning and afternoon. Your Faculty consider their present residence not to be surpassed by convenience of locality and other advantages thereby entailed, and with the improvement now desired, sufficient for present purposes. They therefore in conclusion earnestly request your consideration and entertainment of their necessities and a concession to the appeal made for the moderate sum now asked."

In 1860, the whole matter was put plainly before the Board of Governors in the following document which illustrates the conditions of the time so well that it is republished in full:—

February 18th, 1860. Special meeting held at Bank of Montreal,

14th February, 1860.

To the Governors of the McGill College, Gentlemen:—

The Medical Faculty having carefully considered the proposed change in the location of their establishment, beg to lay before you as the result of their deliberate judgment that, first, the Medical School would be very materially injured by its place of operations being removed to any distance from its present locality, which is in proximity to the Hospital, to the boarding houses of the students and to the residences of the Professors; second, were it feasible they would prefer a new site anywhere between Dorchester and Craig, and Bleury and St. Lawrence Streets, but as it appears there is no probability of finding a suitable lot; therefore, third, as it is indispensable that increased accommodation shall be procured before next session, they recommend that the present building be enlarged and altered, being of opinion that this can be done with ease and at a moderate outlay, and in a manner to meet all the wants of the school for a series of years.

As it may be satisfactory to know the grounds upon which the Faculty have come to these conclusions, they transmit the following memorandum:—

A. F. Holmes, M.D.
G. W. Campbell, M.D.
Committee appointed to meet the
Committee of Governors.

REASONS.

1st. A number of years ago the Faculty were induced contrary to their own wishes to remove their lectures, etc., to the College Buildings on Sherbrooke street. This change furnished the principal reason for the Canadian School of Medicine, then being established, adding an English department to itself, which was continued for several years to the manifest injury of the McGill School.

2nd. Subsequently, when by an arrangement with the French Canadian School, the English Department was given up, a new English School was started under the name of the St. Lawrence School of Medicine.

3rd. The danger of the more favorable position of the new school was so obvious that the Medical Faculty resolved to return to the city, and the present building was erected to accommodate them, the result was that the St. Lawrence School was broken up.

4th. Therefore the dangers which they have already undergone are sufficient in their eyes to prevent their risking a renewal of them by removing from the central parts of the city.

5th. When the Faculty were lecturing in Sherbrooke street, both the lecturers in Chemistry (who lectured in the evening), actually rented premises in the city for their lectures.

Besides the foregoing, which belong to experience, the following refers to the present :—

6th. The morning lectures close at 12, and are resumed at 2 p.m. During these two hours the visit at the hospital is made, commencing at or near 12 and continuing a greater or less time, sometimes in the clinical wards to past 1 o'clock. After the hospital visit, students generally dine; now, how can they afford the time that would be required to walk from about McGill College and back ?

7th. Again, as one hour frequently intervenes between the different lectures which a student attends, he would spend most of it in walking up and down to and from his boarding house.

8th. The proximity of the lecture building to the hospital is therefore a necessity.

9th. The dissecting would be almost destroyed if the dissecting room were removed from the neighbourhood of the boarding houses. At present, and especially since attendance on zoology and botany have been made imperative, most of the dissection takes place in the evening by gaslight. It would obviously be impossible to get the students to go up to Sherbrooke Street for dissection, putting out of view there being no gas or water.

10th. The bulk of the students live in Craig Street and the streets off it, many often board in St. Paul Street and the French-Canadians more towards the eastern part of the city.

11th. The convenience of the Professors must be considered ; they all, some more, some less, require to prepare for their lecture, and therefore visit the lecture building beforehand to make preparation by laying out apparatus, or plates, or books, etc.

This expressed the views of the Faculty so clearly that the Governors decided to meet them, and at a meeting held on February 25th, 1860, it was resolved:—

"That the Committee be authorized to arrange with the proprietors of the building used by the Medical Faculty and with the Medical Faculty for the acquisition thereof at the price of $4,800, with the view of erecting thereon the further building required for the Faculty at a cost not exceeding $3,200, on the understanding however that the Board will not be able to pay up to the Faculty the $1000 intended to be paid to it from the college funds for the next two years, and cannot engage to continue their grant of $500 a year from such funds."

A second resolution passed at this meeting shows that the Governors still held tenaciously to their own views in the matter:—

"Resolved that in thus voting the Board feel it necessary to place on record the fact that the above resolution is passed simply on account of the strong view expressed by the Medical Faculty in favour of the site in question *and although they are by no means convinced that the interests of the University or of the Medical Faculty will thereby be as much promoted as they would have been by the erection of a suitable building on another site.*"

The contract for carrying out these additions to the Coté Street building was given to a Mr. Spiers, architect, and the alterations were carried out at a cost of $3,200 with two subsequent grants from the Governors of $500 and $400 respectively.

On the Origin and Rise of the Montreal General Hospital, the *Canadian Magazine and Literary Repository*, No. xx., Vol. iv., Feb., 1825.

But the number of students continued to steadily increase. From 126 in 1860-1861, the year of the extension of Coté Street, they had reached 184 in 1866-1867, and the old demand for increased accommodation soon arose anew. And now the Medical Faculty themselves began to look upon the University precincts as their proper home. The rapid growth of the city to the west had removed many of the old objections to the site, and even rendered it a more suitable spot for the home of the Faculty than a place nearer the Hospital, which was already in the heart of a busy town in what was likely to be one of its poorer quarters.

And so on October 1st, 1869, we find Dr. G. W. Campbell, the then Dean, setting forth their views to the Governors in the following letter:—

"The great desire of the Faculty is to improve its means of instruction by having a larger and more suitable building erected for its use in the University grounds above Sherbrooke Street. Principal Dawson is well acquainted with the very inadequate provision which its present building affords for the necessary operations of the Faculty. If the Governors of the University agree to this proposal the Faculty will bind itself to pay annually to the Treasurer of the University the interest of the money expended in the erection of the building, over and above the sum obtained from the sale of the property on Cote Street, at present occupied by the Faculty. Of course the Faculty would expect that the Governors would remit this annual rent whenever they considered that the funds of the University were in a sufficiently prosperous condition to enable them to do so, without detriment to its other interests. It is very desirable that a determination should be come to upon this subject at as early a period as possible, for the building should be ready to receive the Library and Museum of the Faculty by the 1st of September next, so that it would be desirable if possible to have the foundations in before the winter is fairly on us.

I remain, Sir,

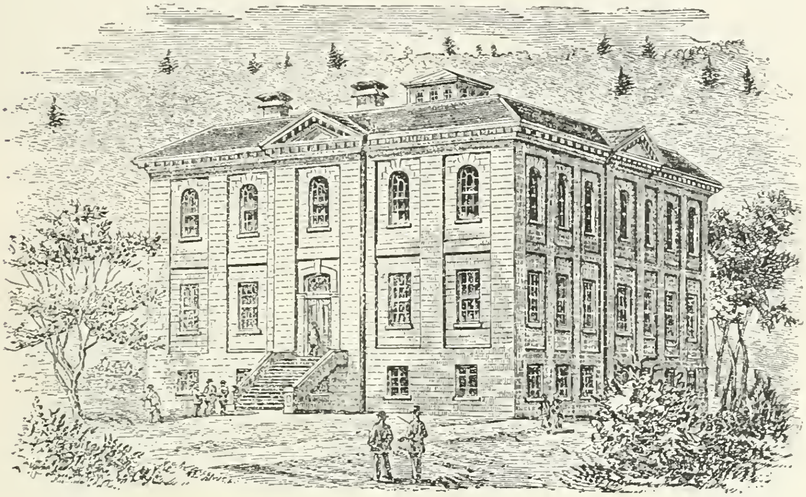
Your obedient servant,

Geo. W. Campbell, Dean."

This letter was referred to the Committee on Real Estate with a recommendation, but a long delay was occasioned before even the matter of assigning a lot in the University grounds to the Medical School could be decided. Difficulties were raised by those who had bought lots along University Street, against a medical school being erected on that side of the College grounds, and the owners memorialized the Governors against it. Investigation, however, showed that in the year 1863, a sale of these lots on terms more advantageous to the College than those on which the present owners had acquired them, had taken place and had been nullified on the advice of Mr. Strachan

Bethune because the owners required a clause inserted in the deed of sale limiting the sale of adjacent lots. Neither had any provisional clause been inserted in the deed of sale to the present owners of the University Street lots, nor could such limitations have been in any way the intentions of the Governors, as seen from their having nullified the previous deed of sale. The claim thus fell to the ground.

This difficulty having been settled and the site of the present buildings having been chosen, plans and tenders were called for and on February 16th, 1871, the following interesting Minute occurs:—



The Building of 1872, situated in the University Grounds.

"That the estimates for a new Medical School, the plans of which have now been submitted to the Board, be obtained and that *the Estate Committee are hereby authorized to undertake the erection of such a building provided the whole cost be under the amount to be realized by the sale of the Protestant Board of School Commissioners bonds paid to the Royal Institution for Burnside Hall and the land adjoining, namely $24,000.* That the plans be first submitted to the Medical Faculty for their decision, as no alterations will be allowed on any consideration after the tenders for the same have been received. That the Faculty of Medicine be informed that in the event of the Governors erecting the building, it be clearly understood that the Faculty engage to meet annually the incidental expenses of insurance, say to $16,000, corporation assessments, water rates and municipal taxes, and pay for all repairs in keeping the property in good order, the whole at the expense of the Faculty. That the Faculty is requested to state whether these terms are satisfactory and acquiesced in by them before the Estate Committee proceed further."

At a subsequent meeting the following resolution was passed:—

"The plans for the new Medical Building and the terms proposed by the Governors be accepted by the Faculty,—the Governors erecting the building upon the plans exhibited and the Faculty binding itself to keep the building insured to the extent of $16,000, to pay the corporation assessments, water rates, municipal taxes and to pay for all repairs necessary for keeping the property in good order."

The plans chosen were those of Hopkins & Wiley, who were the architects of the new building which still stands—its internal arrangement only partly altered—as the first block of the present buildings. The estimated cost was $23,991.50, but $27,000 was spent on it by the Board of Governors. The Faculty themselves spent over $3,000 additional in furnishing and equipping it, and also paid according to agreement "the corporation assessments, water rates and municipal taxes, the insurance to the extent of $16,000, and all expenses necessary to keep the proporty in repair." (App. xviii.)

The material advancement of the School up to the time of the return to the University Street grounds and the opening of the building of 1872, had been slow and struggling, the work carried on in narrow quarters on scanty funds. Its rapid growth, both in number of students and in breadth of education—all facilities during the 20 years that have since elapsed—is measured by the extension of the modest single block of 1872, through three successive additions to form the new buildings of 1901.

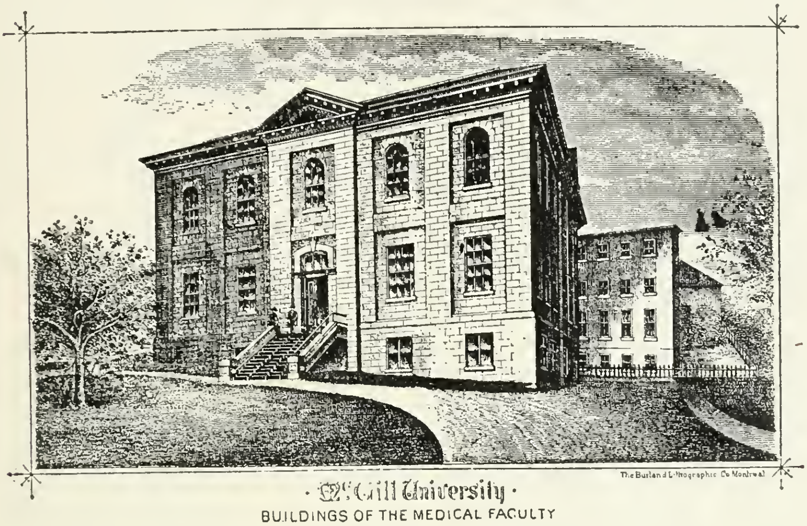
Such extensions have meant of course widely increased resources. The first substantial public support was the Lean Choil endowment of $50,000 given by Lord Strathcona in 1882; in 1883, the Campbell Memorial Fund, raised by graduates and friends of the University, supplied a further $50,000. Of this fund some $25,000 was applied in 1885 to the first alteration in the Building.* An extension of three stories was built at the rear, almost doubling the capacity. It contained two large lecture rooms, one capable of seating 275, the other 300 students, and laboratories for Physiology, Pharmacology and Histology. (App. xix.)

In 1893, Lord Strathcona endowed the Chairs of Pathology and Public Health with $100,000. This led at once to a demand for laboratory equipment in these departments and this time it was the late Mr. J. H. R. Molson who came to the assistance of the Faculty with a gift of $60,000. This money, with $23,000 additional from the private funds of the Faculty, was spent in the purchase of adjoining land, and a private residence which stood upon it, converting this into a pathological laboratory and connecting it with the old buildings by a suite of new rooms. A Laboratory of Sanitary Science was provided for at this time and a class room capable of holding 450 students. These formed the extension of 1893-95.

---

*The Extension of 1885.

Finally in 1899, Lord Strathcona again contributed $100,000, and with $3,000 additional from the Faculty's private funds, has all been expended on the new building of 1901, in extending all the departments and especially in bringing the laboratories up to the standard of to-day. As one walks through its corridors and enters its beautiful library, or looks from its lofty laboratory windows upon the city below or the Royal Victoria Hospital above, after indulging in such a retrospect as has been made in this paper, one thinks, with desire for their presence, *of those four strong men, who, less than eighty years ago laid these foundations, and whose labours live now in these works which follow them.*


The Burland Lithographic Co Montreal
· McGill University ·
BUILDINGS OF THE MEDICAL FACULTY

The Extension of 1885.

PART IV.

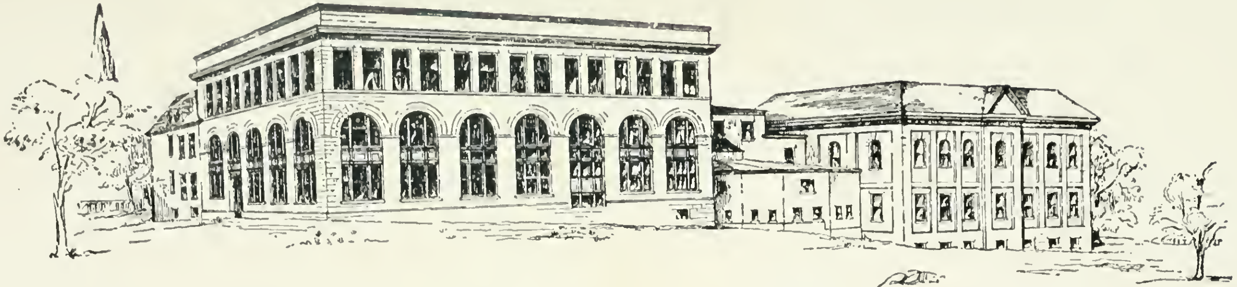
THE NEW BUILDING OF 1901.

The building of 1901 was formally opened by the Duke and Duchess of York on September 19th, 1901, at the time when Their Royal Highnesses were passing through Montreal on the Viceregal Tour of the Colonies. The ceremony was performed in the central hall of the building which from its comparatively small size allowed of the presence only of those more immediately interested, a circumstance which added to its impressiveness.

This main central hall is the main architectural feature. It is an expansion some 35 feet wide of the long corridor which runs from the front to the rear entrance of the building. It is open to the skylighted roof in more than half its area by a central light well, which is surrounded above by the three successive tiers of the upper stories. The gallery of the first storey is supported by a ring of pillars rising from the floor of the hall. The whole effect given is one of light and space. The two staircases arise from the front end of this wide portion of the hall, and the most of the laboratories and class rooms open into it or its galleries. In the arrangement of the building the plan has been to group the different departments together so that class room, laboratories and museums may be in communication with professors' rooms and rooms for special work. In lighting, ventilation and general equipment no effort has been spared to bring its laboratories, class rooms and its fine library up to the full standard of modern requirements. The architect is Mr. Andrew Taylor of the firm of Taylor & Gordon.

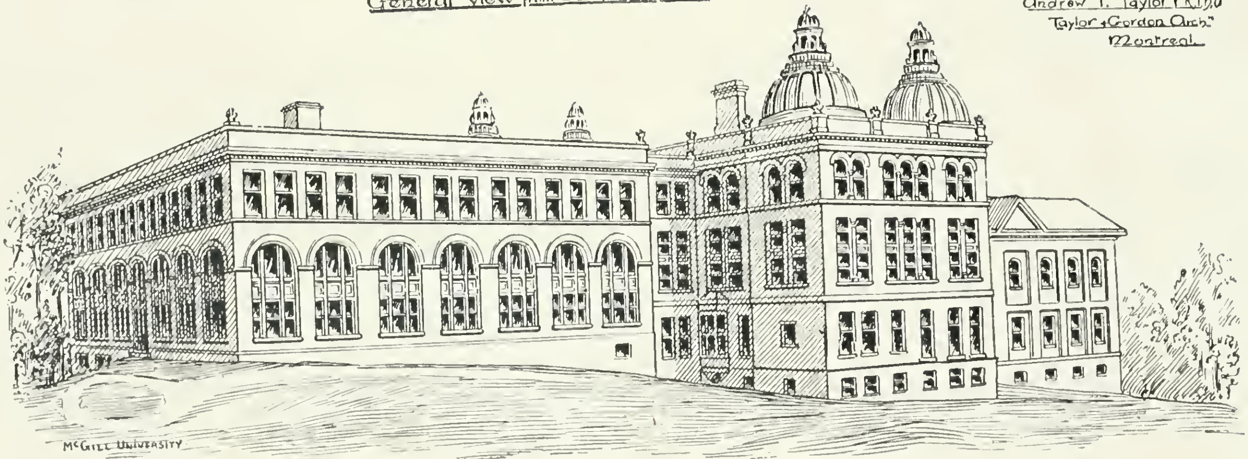
The building faces to the south and is of cut stone. In the full plan it consists of two blocks, an anterior, the larger of the two, connected by a narrower portion with the posterior. The front block has as yet only been completed in half its depth, its anterior half being occupied by the old building of 1872, which is still standing. It is hoped in time to complete it, replacing this older portion by an addition which will project to the south beyond its present façade and about 30 feet out on either side of it, as does the central portion already built, thus completing the anterior block of the plan.

As it stands to-day the building may be said to consist of three parts. The front block of 1872, three stories high, a central portion four stories high consisting of two wings jutting out widely on either side



General View from Carlton Road

Andrew T. Taylor F.R.I.B.A.
Taylor & Gordon Archts
Montreal



View from "Carlton" Road Shewing New Wings erected 1901.

of the front block, and a narrower part behind connecting the anterior block of the architect's plan with the posterior one. This is raised a couple of feet above the level of the front block and it replaces the extension of 1885, which has been pulled down. The third part is the rear block raised some six feet above the second and entered by a flight of steps. It is three stories high and is in part new, in part the old extension of 1893-1895. The half on the left hand (northwest) side of the hall with the hall itself stands practically unaltered. But the right hand (northeast) wing with the private residence acquired in 1893, and used as part of the Molson Pathological Laboratory, has been entirely pulled down and is replaced by a new wing symmetrical with the old one on the opposite side of the hall, the two together forming the square rear block.

The basement runs under the whole length of the building excepting the older northwest wing at the rear. It is asphalted throughout, is some 10 feet high, fairly well lighted and slopes gently upward following the rising ground on which the building stands. It contains vat and storage rooms for anatomy, carpenters' shop, students' lockers (of which there are 500) and lavatories, storerooms, janitor's apartments, and fanroom.

The janitor's apartment is at the northwest corner quite at the rear. It has six rooms of good height and well lighted. Here dwells the well known Mr. Cook.

The old students' entrance on the east side of the basement of the original front block still remains.

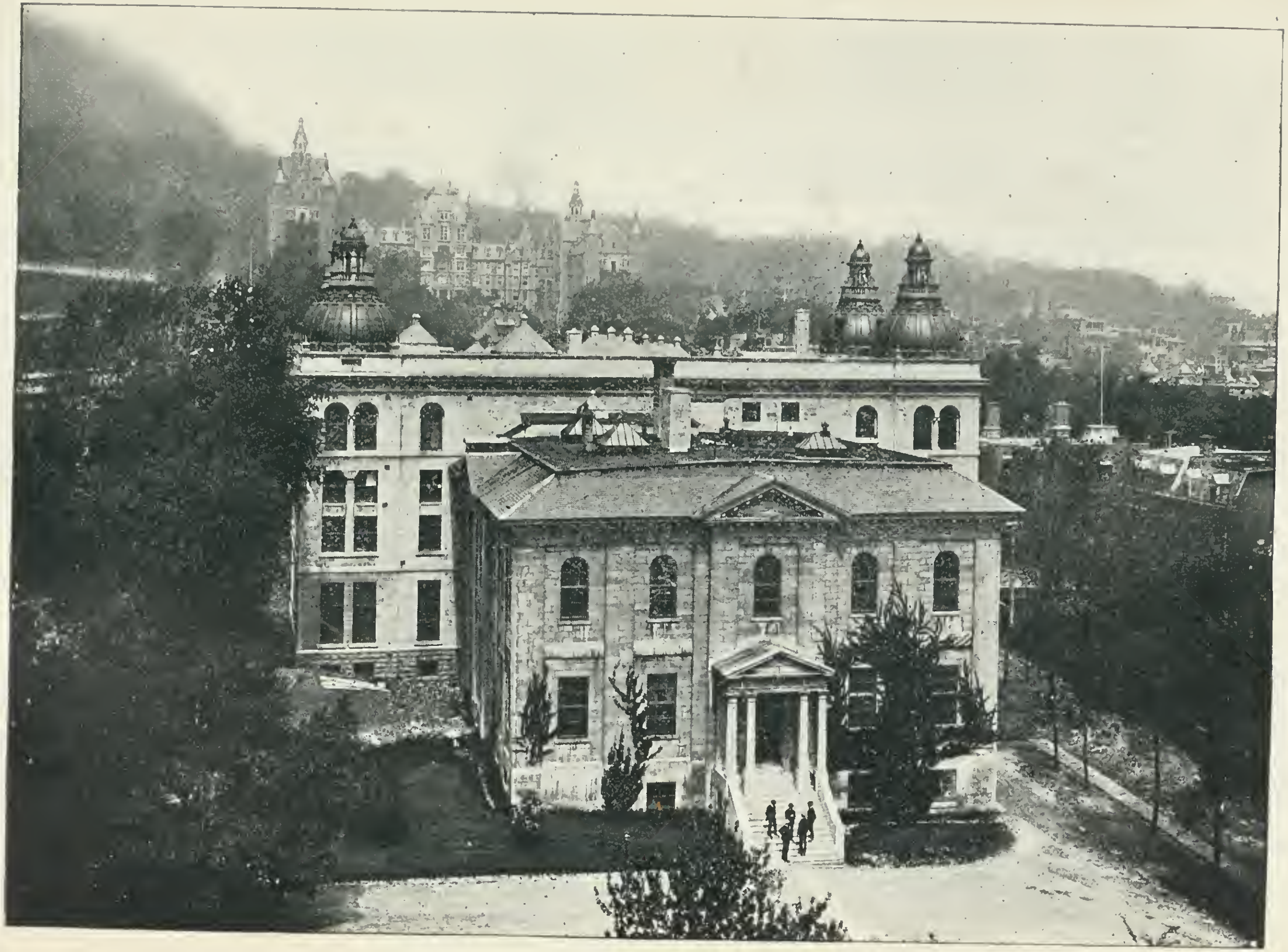
The ground floor: The main entrance is on the south side. The corridor runs the whole depth of the building some 325 feet. It is some 10 feet wide in the front and rear blocks, expanding in the centre portion into the space already described, some 35 feet wide. The Library is entered by the first door on the left. It consists of students' reading room with librarian's office, and stackroom. The outer end of the stackroom occupies the front of the projecting central block and is thus lighted from two sides, and is fitted up as a Professors' reading room. The whole of the old library has been converted into the students' reading room, making a very large, handsome and well lighted apartment, 25 feet by 65 feet. The library contains some 23,000 volumes and is being brought daily into more active use by students and teaching staff alike under the efficient management of the Assistant Librarian, Miss Charlton.

The Pathological Museum lies on the right of the main entrance. It consists of a suite of five rooms. The front part is occupied by two rooms with galleries used for moist and dry specimens respectively, connected by a smaller room containing a spiral staircase which ascends to the galleries. These rooms are fitted up with shelving through their whole height and are painted in dark green and white. A central table with shelving upon it for demonstrations and a students' corner fitted up with table, etc., are also provided. This part of the museum was arranged in its present order in the year 1897. Behind these rooms an entrance leads into the curator's room, formerly the registrar's office, and behind this room again is the Museum Annex, a space below the seats of the large theatre adjoining. The outer end of this which is well lighted is fitted up as an Obstetrical and Gynæcological Museum, the dark part next the hall is partitioned off and used for hand specimens. (These last two apartments which have been added to the extension of 1901, are not shown in the plan, it having been altered in this particular.)

The Faculty room opens into the large central hall through the Professors' room on the left. It occupies the outer portion of the rear part of the projecting left wing; the front of this wing consisting of the library, stackroom and Professors' reading room. The Faculty room is very handsomely decorated and has a large mahogany table of special form which gives it character and dignity. The Registrar's offices occupy the remainder of the left side of the central wall, being situate in its narrower portion. On the right of the hall is a lecture theatre seating 250 students, two small Professors' rooms and the students reading room, where a tablet erected by the students to Lieutenants Borden and Riley may be seen.

The whole of the ground floor of the rear block is devoted to the Department of Chemistry; students laboratory on the right, a class room seating 400 on the left, with private and research laboratories behind. The hall communicates also with the Pharmacological department which occupies the northeast corner of the building. The department is now in the enjoyment of extensive laboratories fully equipped for the .teaching of this branch of the curriculum and liberally supplied with instruments, apparatus for research work along Pharmacological and Physiological lines. For this equipment the college is indebted to Mr. David Morrice of this city, who has supplied the funds therefor as a memorial to his son, the late Eddie Morrice. Mr. Morrice had further, through a yearly grant, supplied the means for the persecution of research work in the department.

The first and second floors of the central blocks are devoted to the Department of Anatomy, the dissecting room in the front, anatomical museum on the right (45 feet square) and anatomical class room on the left (both of these departments being the full height of the two stories with smaller rooms for Professors and Demonstrators.



The Present Medical Buildings.

The Department of Hygiene runs along the back part of the rear block. It consists of a suite of rooms for research and practical work, students' laboratory, professors' room and museum. This department was specially endowed with a sum of $50,000 by Lord Strathcona in 1893, and is fully equipped with models and new apparatus.

The top story (4th of the central ard 3rd of the rear block) is devoted to the Departments of Physiology, Pathology and Histology.

Physiology occupies the entire left side, having lecture theatre, Professors' and Demonstrators' rooms, special research rooms and students' laboratories.

Pathology is on the right side with a large and fully equipped students' laboratory and a suite of rooms for special research workers, Professors' private room, library, incubation and dark rooms, etc.

Histology occupies the whole back of the upper story.

Some members of the Teaching Staff have kindly given me the following accounts of the departments with which they are connected.

Pharmacological Department.

The department possesses four well lighted laboratories, a museum and an apparatus room, all on the lowest floor of the new building. The laboratories consist of a large teaching laboratory, and three smaller ones used for research work. The teaching laboratory is equipped for practical work in Pharmacology and Therapeutics and offers accommodation for 30 students doing such work. The research rooms comprise a completely equipped chemical laboratory, a room devoted to experimental work of various descriptions, and one used to accommodate an extensive special library, apparatus for optical determinations and chemical balances.

The apparatus represents a very complete outfit of the various instruments used in Physiological, Histological, Bacteriological and chemical investigations. In addition there is a considerable amount of apparatus used in teaching the students.

The possession of this equipment has made it possible for the department to supplement its didactic lectures by numerous demonstrations of the action of drugs, an addition which we believe must be of great advantage to the students. Further, an optional practical course was offered to the students of the second year and was participated in by more than half of the class. In this course the students had the opportunity of studying for themselves the action on frogs and on mammals of many of the more important drugs. Practical work in pharmacy was also a feature of the instruction.

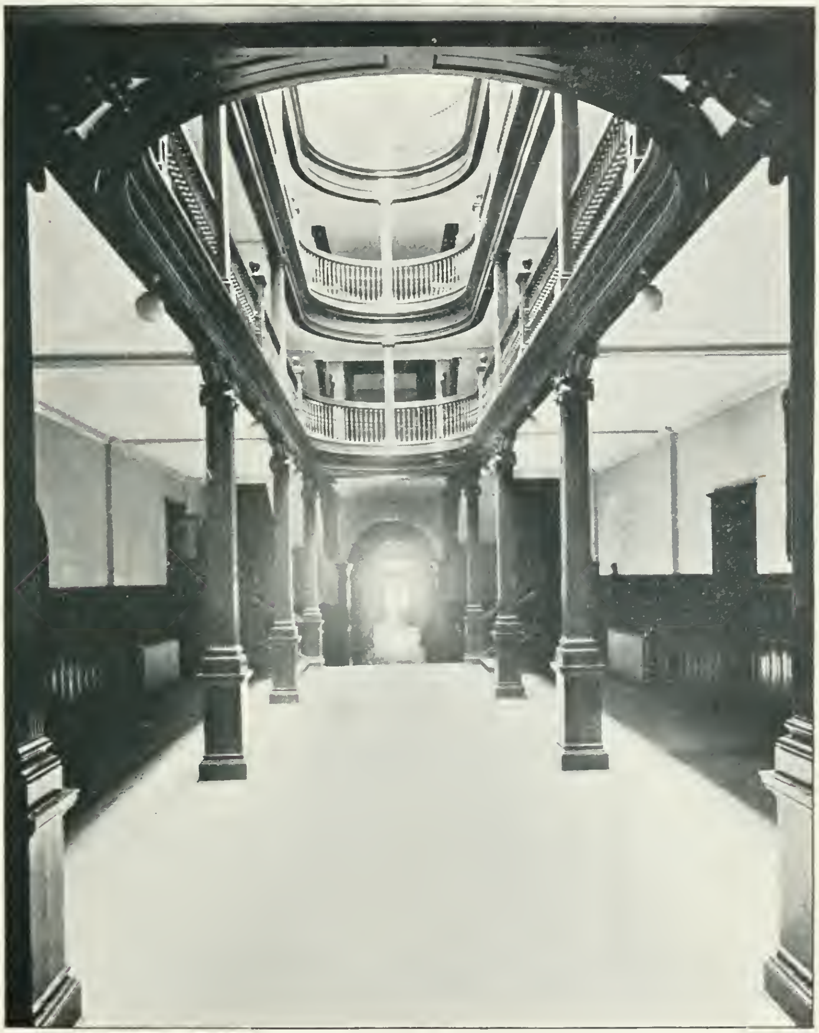
The department is able to offer ample accommodations and facilities to any qualified persons wishing to engage in research work along Pharmacological and Physiological lines, and it is hoped that students or graduates of this or other schools will avail themselves of this opportunity.

THE PHYSIOLOGICAL DEPARTMENT.

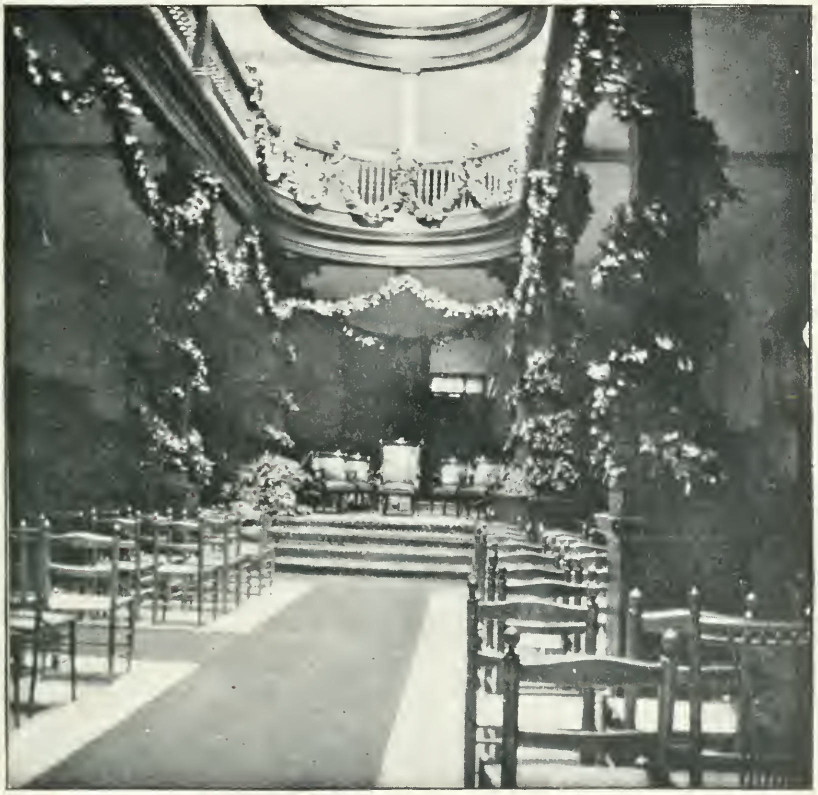
The Physiological Department embraces a large lecture room, a large students' laboratory and seven smaller rooms for demonstration and students at a time. On each table are four glass cases containing the apparatus for experimental Physiology and underneath are wooden cupboards containing apparatus for Physiological Chemistry. The class is divided into groups of two and each group have at their disposal a complete set including a substantial clock-work kymograph and a liberal supply of strong, well finished instruments for stimulating, recording and time marking.

They perform for themselves a goodly number of important experiments in which many of the fundamental facts of physiology are investigated by the graphic method. For this work frogs are used where possible but a limited number of mammals are also supplied and in some cases the students themselves serve as the subjects.

Near the demonstrator's platform is a switchboard from which various kinds of electrical currents may be supplied to the tables as required through wires running under the floor. The currents at the students' disposal include interrupted currents for slow and rapid time marking, and constant currents of suitable strengths for running the inductoriums and for stimulating and polarizing animal tissues. The strongest current supplied is one of seventy volts with which the law of contraction in the human body may be completely worked out. The necessary apparatus for cutting this current down and regulating it is contained in the students' cases. Attached to the wall of the laboratory is a galvanometer which was specially designed for students' work by Professor Tory of the Faculty of Applied Science. On this they perform for themselves the classical experiments in Electrophysiology. In this instrument the results are read from the movements of a tiny pointer along a scale, without the use of either telescope or mirror. It is sufficiently delicate to show the demarcation currents of frogs' muscle and nerve and also the current of negative variation.



Central Hall, 1901.



Central Hall after the opening of the New Buildings by Their Royal Highnesses the Duke and Duchess of York, September 1901.

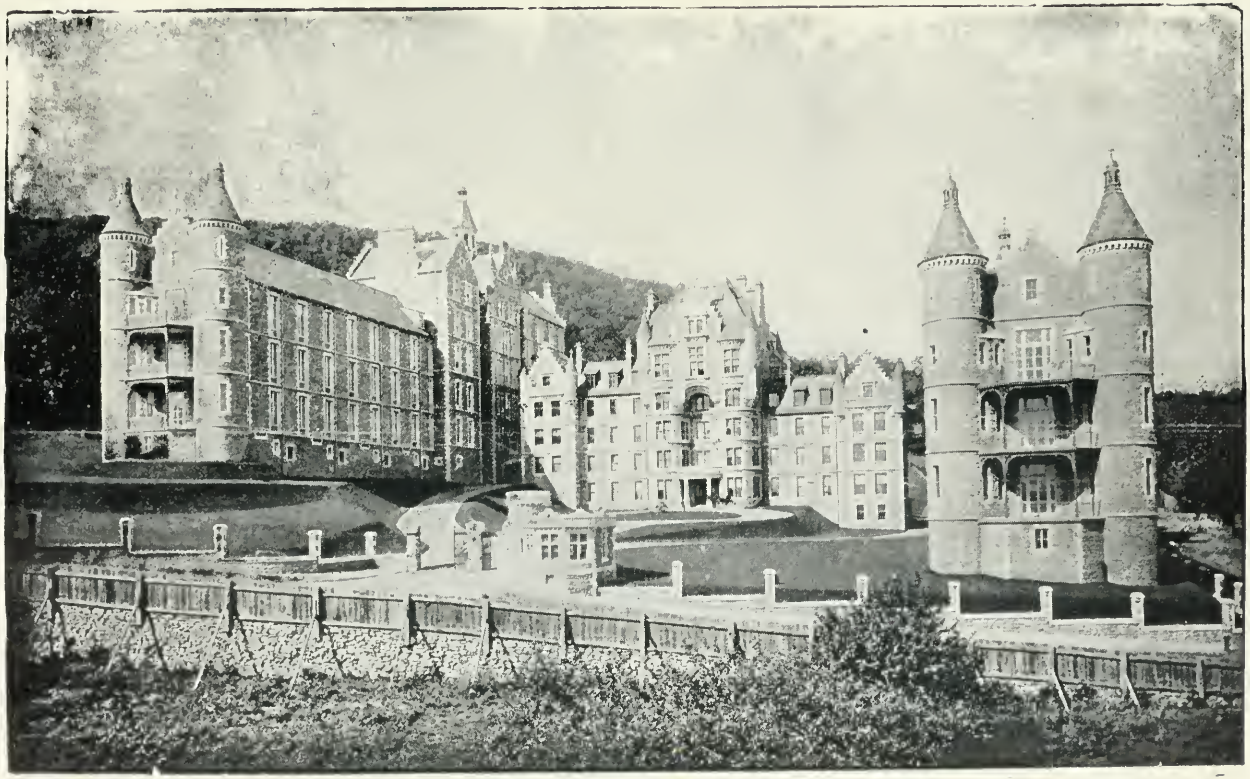
In addition to the cases and cupboards mentioned above, the tables are supplied with shelves for reagent bottles and also with a water tap and sink at each end. These are used especially in the Physiological Chemistry course where the composition of food stuffs, the chemistry of digestion and the physical and chemical properties of blood and urine are taken up. The research laboratories are supplied with a large Hurthle kymograph, mercury and membrane manometers, heart catheters, clock-work and electrical time markers, and a considerable quantity of other apparatus for demonstrations and research.

The lecture room has seating capacity for 250, can be well lighted by either sunlight or electricity and can be conveniently darkened for lantern demonstrations.

PART V.

THE ROYAL VICTORIA HOSPITAL.

Any sketch of the Medical Buildings of McGill University, would be incomplete without a reference to the Royal Victoria Hospital. It was founded in 1887 by Lord Mount Stephen and Lord Strathcona, who each gave $500,000 for the purpose, and it was thrown open to patients in the year 1894. Its close proximity to the Medical School can be well seen in the picture of the exterior of the new building published herewith. It is beautifully situated on the side of the mountain, and commands not only a magnificent view of the surrounding countryside, but also hygienic conditions of air, light and space, that are invaluable in the treatment of the sick. It is built of cut grey stone, after the model of the latest European hospitals, and has a large central administration block, with two wings projecting forwards on the west and east sides, devoted respectively to surgical and medical wards. Its out-patient department has been lately completed, and is thoroughly modern. It is high and airy, with suites of rooms for the special departments and a fine operating room for minor cases. It is also provided with clinical, bacteriological and pathological laboratories, which allow of the investigations so indispensable an adjunct to diagnosis in these days, and the connection of which with our larger hospitals contributes so large a share to the advancement of the medical science of the day.



Royal Victoria Hospital.

AN ACCOUNT OF THE ORIGIN, RISE AND PROGRESS OF THE MONTREAL GENERAL HOSPITAL.

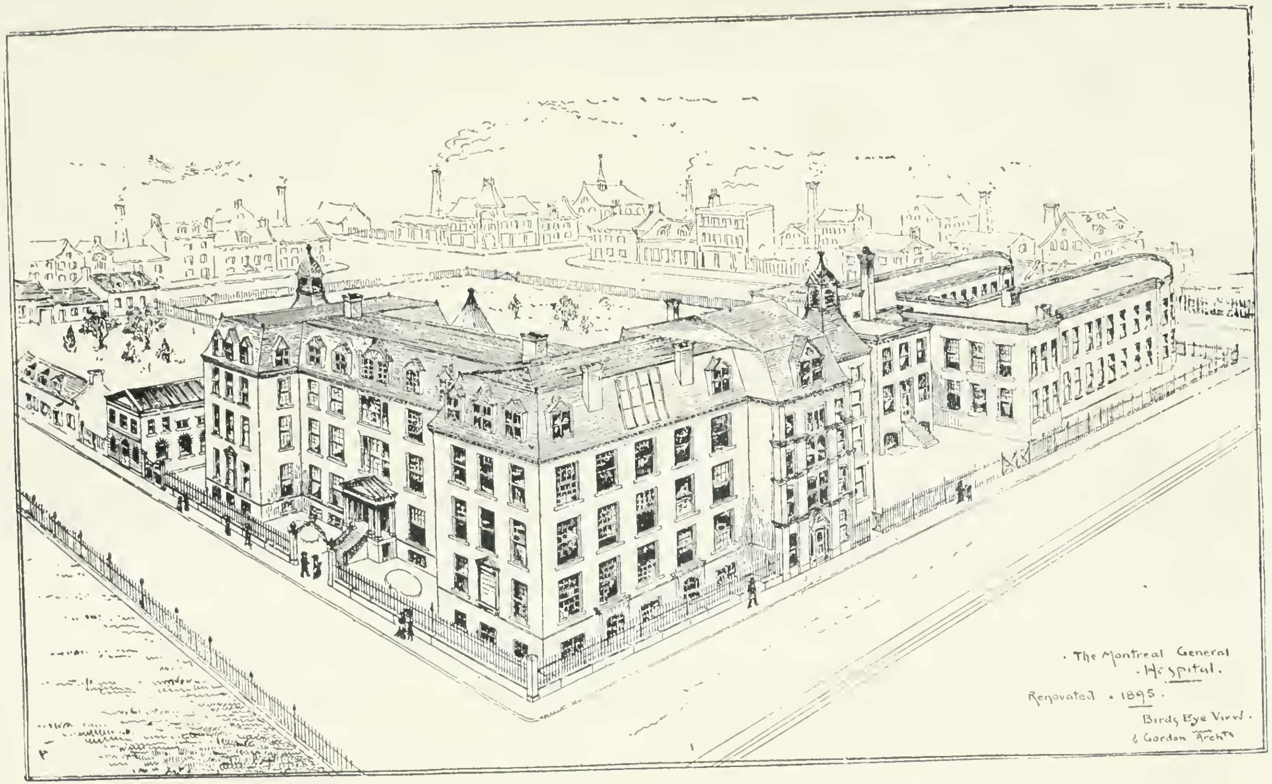
Reprinted from *The Canadian Magazine and Literary Repository*, No. XX., Vol. IV., February, 1825.

To trace the origin and rise of any institution which is designed for public benefit, is a labour accompanied with no small degree of pleasure to the person engaged in it ; and the extent of his gratification will be in exact proportion with the usefulness of the institution whose history he details. But in addition to the individual pleasure which flows from such a task it has other claims to notice. A history of such institutions, as that which forms the subject of this article, is only a mark of common justice to which their founders are entitled, and at the same time may be essential to the present generation as well as to the future, by stimulating others to make similar efforts.

Those institutions which have for their object public benefit, owe their commencement to some of the finest feelings in our nature, a desire to relieve the distresses and minister to the comforts of our fellow creatures ; and it is no more than justice to hand down to posterity the names of men who were so strongly actuated by those feelings, as to leave in those valuable institutions proofs of them, from whence a whole public reaps a benefit. It is not enough to have the names of their founders, recorded and blocked up among the archives of the institution. If only this be done, they are soon forgotten, except by the few who have access to these records ; and one-half of the benefit which would flow from a general diffusion of their good example, is lost to mankind. An argument against such histories has been advanced from the circumstances of its being thought indelicate to propagate the names of such men during their lives ; as if it savored of ostentation on their part. This is a mistaken idea. Why should any man be offended at seeing his name recorded for a good action ? And if in the performance of that action he has set a good example, it cannot be too soon held forth nor too widely diffused for imitation. Besides, to delay such a history until the founders of the institution are no more, might endanger the fidelity of the details, which is always best secured, when made near the time at which the event narrated took place.

Histories of public institutions are highly useful both for present and future generations. Many such institutions which we now see flourishing and diffusing their benefits over a whole country, had their origin from very trivial circumstances. None would have ventured to foretell that they would attain the extent they now have, from the small means with which they were commenced. There are many places where such institutions as the one whose history we are about to detail, are loudly called for, but where a dread of a want of means has hitherto prevented their being established. By examining the faithful histories of the origin and rise of such institutions, men will see that they have often begun on very small means ; and have risen to their present state of magnificence by fortunate circumstances and public patronage, which was extended to them after they were commenced on a scale befitting the means which could be commanded at the time. From such records it will be seen that it is not requisite to defer the establishment of necessary public institutions till means be formed to raise them at once to their greatest extent of magnificence. The co-operation of a few to originate the undertaking ; will soon draw the public attention. And if the object be for public good, it will soon meet with support. Such has often been the case ; great public benefits have resulted from efforts feeble at their commencement ; and whatever can give a hope and induce the desire to make that commencement, will be of service to mankind.

Previous to the establishment of the Montreal General Hospital, the only public place for the reception of the sick poor was the Hotel Dieu Nunnery. This place was in many respects inadequate for the purpose. It was on too small a scale to admit the numerous cases of indigent sick such a population as the city of Montreal presented. Being under the management of a few pious females, many cases occurred among the dense population of a commercial city which were not admissible. Many applicants for relief were of course rejected ; and this limitation of the Hotel Dieu to the reception of particular cases, combined with that unpleasant feeling which but too frequently arises from the differences of religious opinions, conspired to give this Hospital a character widely different from what ought to pervade such an institution. The want of a place for the reception of the indigent sick, on such a scale as the population of the city required and under such management as would extend relief to every description of disease, had of course been long felt ; and at different times the supplying of this deficit had been considered. Still, nothing had been done to effect this desirable object After the war a change took place in Canada which contributed to render such an institution still more necessary. We allude to the immense influx of emigrants which set in—and which not only created an increase of population beyond


. The Montreal General
. Hospital.
Renovated . 1895.
Birds Eye View.
& Gordon Archts

what would have arisen in these provinces from other causes, but that increase was of such a nature as to render it necessary to take prompt measures for supplying many requisites, of which the emigrants were urgently in need; and to the exertions made to supply these wants we are indebted for that valuable institution, the Montreal General Hospital.

From the termination of the war in 1815, every succeeding summer brought to this country increasing numbers of poor peasantry from England, Scotland and Ireland. Many families embarked from the Mother Country too late to reach the remote situation in the Canadas where they had friends and relatives previously settled, and on whose alluring promises they had depended when they left the Mother Country. Arrived in Canada and landed at Quebec, they had still (with empty pockets and bodies debilitated by those diseases incident to a long voyage in a crowded vessel) to proceed several hundreds of miles before they could reach the place in which their friends resided. The season being frequently too far advanced for them to take the advantage of a summer conveyance to the place of their ultimate destination, what could they do but endeavor to find employment (such as they weakened by previous disease, could take) to enable them to live through a long and vigorous winter? Even in this effort they were defeated. The long and arduous winter in Canada puts a stop to the operations of husbandry, and to the labors of many outdoor mechanics. A great proportion of these emigrants had been bred as manufacturers, weavers, etc., a business for which there was no demand in this country. Under such circumstances what could these unfortunate people do ; no resource was left to them but a dependence on promiscuous charity ; and that source only affording a scanty and precarious supply, tending to maintain life, but ill calculated to renovate a frame or restore a constitution previously brought down by sickness. In Lower Canada the French language prevailed in the country ; of it these poor emigrants had no knowledge, and hence they were of necessity constrained to reside in the principal towns. Quebec and Montreal became of course the principal points where they spent their first winter ; and on these cities the burden of supporting them chiefly fell, and the wretchedness of their condition became most apparent. The distressing hardships of these poor unfortunate people had been so great during the previous years, that on witnessing the accumulated numbers of them which arrived at Quebec in the summer of 1818, it was decided among a few charitable individuals in Montreal that some preparations for their maintenance should be made for the winter. In this plan the Protestant clergymen of every section readily combined ; appeals were made to the public in the form of charity sermons, and by dint of these and public subscriptions, a sum amounting to twelve hundred pounds, Halifax currency, was raised and appropriated in the following manner :

The persons to whom the expenditure of this money was entrusted, well knew that the indiscriminate distribution of it in money, even under every care they could bestow, would not be attended with the desired effect; they therefore decided on establishing a soup-house, from whence might be issued to such individuals as they considered objects of charity, a portion of soup, meat and vegetables, daily. At this time there existed in Montreal an association of females who, actuated by the most benevolent motives, had formed themselves into a society for charitable purposes and who, in their unwearied exertions in seeking out and relieving objects of distress, might be truly said to confer more real benefit than all the promiscuous charity of the rest of the population. To these ladies the superintendence of the soup kitchen was entrusted, and in this way a provision was made which not only alleviated the distress of many a sufferer, but was in all probability the means of preserving many from death by actual famine.

These ladies, then termed the Benevolent Society, had not long entered upon the discharge of their duty when they found there were other claims of the distressed besides their poverty to be satisfied. They, with unwearied zeal, sought out those who were truly objects of charity in order to guard against the hypocrite, and in the course of their enquiries found many stretched on the bed of sickness, unable to seek for relief, and for whom medical aid was indispensably necessary. They justly considered that to relieve them was more the object of pure charity than to supply the wants of many clamorous applicants who came for food, when they could have procured it from their own labor. This opinion was communicated by these benevolent females to the committee who had been appointed to disburse the money collected, and who readily joined with them in the plan of renting a small house where a few of the most dangerous cases of diseased and poor individuals might get the benefit of medical aid. This was a step, though necessary at the time, not to be entered upon without mature consideration ; the funds which had been collected were not more than sufficient to furnish the numerous claimants on their bounty with the means of supporting life ; but still the charitable feeling for the sick and diseased had its weight with both the gentlemen of the committee, and those ladies who so urgently pressed upon their minds the necessity of such an establishment. It is not here requisite to enter into the whole proceedings—on this occasion a brief outline is all our limits will admit. Upon the representation of these ladies, Dr. Blackwood, a young gentleman who had retired from the army where he had acted as a surgeon, agreed, in conjunction with some of the other medical gentlemen of the city, to give their professional assistance, provided a place was found where the most necessitous cases of sick poor could be relieved. By the exertions of the late Isaac Winslow Clarke, Esq., then Deputy Commissary General (and who was one of the most active and zealous members of the committee), a quantity of condemned barrack bedding was obtained from the Governor-in-Chief, the Duke of Richmond. Thus supplied with the two great requisites for their object, the committee hired a small building in the St. Joseph suburb, consisting of four apartments, which they dedicated to the reception of the most pitiable cases of distress which came under their notice, and gave it the name of the *House of Recovery.* The smallness of the building and the limited state of their means, would admit of their extending relief to but few ; small however as it was, and contracted as the system of its utility must necessarily have been under such circumstances, this establishment was the first step, and from it arose that valuable institution, the Montreal General Hospital, as will be seen from the sequel.

This circumstance took place in the winter of 1818-19, and had a most powerful effect in promoting the general wish that the great desideratum (a place for the reception of indigent sick) should be supplied. From the expenses of this miniature establishment the managers of it were enabled to estimate the sum requisite for an institution of such an extent as the population of the city required. And although they found at that period no source from which they could expect a fund adequate to this, from the charitable exertions which had been made the previous fall by the citizens, the committee justly inferred that by an appeal to the feelings of the benevolent, through the medium of charity sermons, by subscription lists sent round the city for the same purpose, and other charitable donations they might receive from casual occurrences, they would be enabled to establish and support an hospital upon a more extensive scale than the one at present. The Protestant clergymen of the city, some of the most eminent practitioners, with a few of the citizens who had already acted as the committee in the establishment of the soup-kitchen and house of recovery, finding their way thus clear for the attainment of their object on a more enlarged scale, hired a house for the purpose in that part of the city called Craig Street. This was soon fitted up with the necessary articles of furniture, and an additional quantity of barrack bedding was procured by an application to His Excellency the Governor-in-Chief. This building consisted of three wards capable of containing about twenty-four patients, and it was so arranged that a nearer approach to a classification of them could be made, than in the former, very confined building. A meeting of the citizens was called by public advertisement ; a committee for managing the institution was appointed ; a housekeeper and other attendants engaged. At the same time a certain number of directors or visiting members were chosen, two of whom took the duty of visiting the hospital weekly in rotation. The medical department was placed under the direction of professional gentlemen who attended monthly in rotation ; one of them at the same time acted as a house surgeon, and attended daily in case of accidents.

This house was prepared for the reception of patients ; and on the first of May, 1819, such as were in the house of recovery, together with the little property belonging to that establishment, were removed into it.

Soon after, a meeting of those who had subscribed for its support was called by public advertisement, when it was determined for the better management of the institution, that a code of rules and regulations should be drawn up. This duty was referred to a committee chosen at the time, who drew up the following rules, which were afterwards submitted to a second general meeting and approved of.

Rules and Regulations for the Montreal General Hospital.

1st.—The management of the institution shall be invested in a board of 36 Directors, or more if necessary, of whom one shall be a President, seven Vice-Presidents, one Treasurer and one Secretary.

2nd.—That at all meetings of the Board of Directors, five shall be a quorum, of whom one must be either the President or a Vice-President.

3rd.—The Board of Directors shall be elected annually at a general meeting of subscribers, when two thirds of the directors for the preceding year shall remain in office, and the remaining third shall be elected from among the subscribers.

4th.—A general meeting of subscribers shall be held annually on the first Monday in May, to hear the report of the proceedings of the year and to elect a Board of Directors according to Rule three.

5th.—The Board of Directors shall meet quarterly, beginning with the first Monday in May, to receive the report of the proceedings of the institution.

6th.—Special meetings of the Directors may be called by notification from the Secretary, at the requisition of any three Directors, or any two medical officers of the institution.

7th.—Two members of the Board of Directors shall be appointed to act as weekly visitors to the institution in rotation, to receive a weekly report of the number of patients, admitted, discharged, and remaining in hospital, to receive and approve the requisitions of the resident physician, and to inspect the household economy of the institution.

8th.—Five medical officers shall be appointed to the institution by the Board of Directors of whom one shall be a resident physician.

9th.—The charge of the medical department is to be entrusted to the resident physician, who is to make up all prescriptions, and give all directions in the department with the advice and assistance of the medical gentlemen on duty for the time. It shall be in the power of the resident physician to call in the assistance of the other medical gentlemen when requisite.

10th.—Patients shall be admitted to the institution by a ticket from the clergyman to whose parish or congregation they may belong, or from any member of the Board of Directors or from a subscriber. Provided always that such patients be approved of by the physician in attendance.

11th.—None but paupers shall be admitted as patients gratis, and all others shall pay not less than 5s. per week as hospital charges.

12th.—The interior economy and arrangements of the institution, such as the engagement of servants, etc., etc., shall be left to the discretion of the resident physician.

13th.—Outdoor patients shall attend at the hospital at stated hours, to be fixed by the medical gentlemen of the institution to receive medicine and advice.

14th.—It shall always be in the power of the Board of Directors, either at quarterly or special meetings, to alter, amend or add to these regulations.

The regularity and good order in which this institution was kept and the great interest excited in its behalf from the numbers connected with its management, as provided for in the foregoing rules, soon made it an object of public consideration. The quarterly reports evinced the benefits which resulted from it, and had the effect of inducing many, who had not previously done so, to come forward as subscribers, while the confidence excited by its judicious management, operated as a stimulus to many to make greater exertions for its support.

But although this was another step towards the attainment of this important object, and a near approximation to it, still it was not on such a scale as the population required, and by the favourers of the plan was rather looked upon as an experiment to ascertain how far the expenses of such an establishment could be defrayed by subscriptions from the citizens and other funds raised within the town, than anything else. Such, however, was the general impulse in favor of the plan, and such the desire to have an hospital established upon a proper footing, that the undertaking was not allowed to linger long in this state of experiment. At this time there was a piece of ground situated in a convenient place, in the St. Lawrence suburb and which then belonged to a person by the name of Marshall, who occupied it as a nursery. With a liberality highly deserving to be recorded to their credit, the Hon. John Richardson, the Hon. William McGillivray and Samuel Gerrard, Esq., purchased upon their joint credit this lot of ground, and by a notarial deed, declared it to be held in trust for the purpose of erecting an hospital upon it. This occurred in the month of August, 1820, and gave a new stimulus to the exertions already made for the attainment of this desirable object.

The next step was to devise the means of erecting a suitable building for such an establishment, and previous to this being tried, it was very properly deemed expedient to procure plans and estimates for a building so designed that it would suit for an hospital adapted to the exigencies of the present population, and at the same time so contrived that additions might thereafter be made, as an enlargement became necessary, without violating the proportion or altering the design of that which was now intended to be erected. At the next meeting a plan and estimate embracing the foregoing intentions was submitted by Mr. T. Phillips and approved—and such was the zeal of those present at the time, that above £800 was subscribed by individuals present, instanter, to assist in erecting the building.

The plan thus approved of comprised a centre building, 76 feet in length by 40 wide—capable of containing 72 patients, and in cases of emergency 80, with the other necessary apartments for attendants, etc. It was also so laid down that at a future period, when the augmentation of the population should call for it, two wings could be added, projecting to such an extent in front and rear of the centre that each of them could be fitted up to contain as many patients as the centre building.

The estimate for the erection of the centre building, exclusive of an apparatus for warming it by heated air upon a similar plan to that of the Derby Hospital, and besides the sum required for the cupola, double windows, furniture and out-building, etc., was £2,200. It was therefore considered necessary to limit the object at present to the erection of this part, as being sufficient in extent for the demands of the present population and within what the funds they could readily raise would be adequate to complete.

A committee was appointed to carry round subscription lists to raise this sum; and such was the general feeling in favor of the institution, that by the exertions of this committee at the end of the month of January, 1821, a sufficient part of the amount was raised to justify the Directors in making contracts for the building. The Hon. John Richardson, the Rev. John Bethune, Dr. William Robertson, John Molson, sen., David Ross, John Try and Alexander Skakel, Esquires, were elected as a committee for this duty, and Mr. Thomas Phillips was appointed to superintend the building as architect—for which duty fifty pounds were allowed him, but which he relinquished as his subscription to the institution. Contracts were entered into with masons and carpenters for the building; materials were prepared for commencing the work as early in the spring as the climate would allow, and on the 6th of June the foundation stone was laid with Masonic ceremonies, of which event the following account was published in the newspapers of the day:

MASONIC CEREMONY.

On laying the chief corner stone of the Montreal General Hospital.

By the Right Worshipful Sir John Johnson, Knight and Baronet, Acting Provincial Grand Master, assisted by F. X. Perrault, Esq., Deputy Provincial Grand Master, W. E. Thompson, Esq., Provincial Grand Senior Warden, John Molson, Esq., Acting Provincial Grand Junior Warden, Francis Coulson, Esq., Provincial Deputy Grand Master, Simon McGillivray, Esq., Past Grand Warden of the Grand Lodge of England, and several other Brethren distinguished in Masonry, the whole amounting to about 200.

The Craft assembled at the City Tavern at eleven o'clock. After the completion of the preparations usual on such occasions, and the arrival of the Building Committee and Directors of the institution, together with the officers, band, and a guard of the 60th Regiment, the procession set out, moved up St. Paul Streets, and passed through

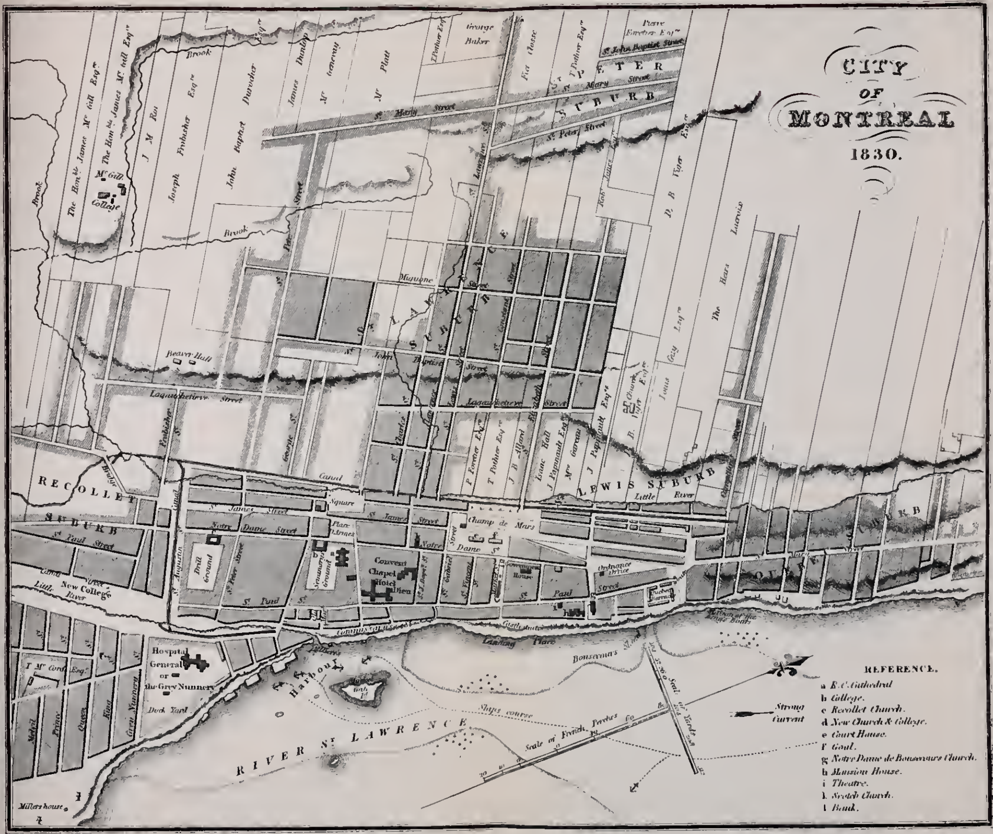
McGill, Notre Dame and St. Gabriel Streets to the sound of a Masonic march, towards the Scotch Presbyterian Church, in the following order:—

A Military Guard.
Grand Pursuivant.
Military Band.
Committee for the Building.
Tyler of the Junior Lodge No. 20.
Entered Apprentices Two and Two.
Fellow Crafts, the same.
Master Masons, the same.
Steward, Standard, Steward.
Secretary and Treasurer.
Senior and Junior Wardens.
Past Masters.
Junior Deacon, Master, Senior Deacon.
Two Stewards.
Lodge No. 12 in same order.
Lodge No. 8 in same order.
Three Past Masters bearing corn, wine and oil.
Architect with Plan.
Grand Deacon.
Grand Secretary with the Book of Constitutions on a Velvet Cushion.
Grand Treasurer with his Staff.
Grand Chaplain.
Past Deputy Grand Master.
Past Grand Warden of England.
Junior Grand Warden with the Plumb.
Steward with the Wand.
Senior Grand Warden with the Level.

Steward with a wand.	Bible with Square and Compass on a Cushion.	Steward with a wand
	Deputy Grand Master with the Square.	
Steward with a wand.	Standard of the Grand Master with his Coat of Arms.	Steward with a wand.

The Grand Sword Bearer.
The Right Worshipful Grand Master.
Two Stewards with Rods.
Grand Tyler with Drawn Sword.
Officers of the Garrison.
Managers of the Institution.
Military Band.

The van, having arrived at the door of the Church, halted; the Brethren opened to the right and left, facing inward; the Grand Master walked up the centre, preceded by his Sword Bearer, and follow-



PLAN OF MONTREAL IN 1830. Published by Bouchette in 1832.

ed by the Brethren in succession from the rear, so as to invert the order of the procession, and entered the place of worship, where an appropriate discourse was delivered by the Rev. J. Somerville, Grand Chapter, and a collection made in aid of the funds of the institution. After which it left the Church in its original order, passed through part of St. Jacques Street up the Main Street and St. Lawrence suburb, and thence along Dorchester Street, as far as the lot of ground on which the future hospital was to be erected, into which they were admitted through a floral arch constructed by the Montreal Horticultural Society, of which the following description has been given to us:

"It was of the ancient Gothic order. The principal columns of buttresses were crowned with turrets, from within which arose sharply pointed spires whose summits were encircled by a rich profusion of the choicest flowers now in bloom, whence issues tufts of evergreens between 3 and 4 feet high. Adjoining the columns, were architraves, the diameter and height of which were about two-thirds those of the former, on which rested the arch, of a semi-reversa form, which, instead of coming to a point at top after approaching its own diameter followed out and formed a cove for a tower, whence shot up a spire similar to the others but from its position, appearing considerably higher. Upon this spire was fixed a cross, about 5 feet high, tastefully composed of evergreens and of a few modest flowers; and the face of the arch bore the appropriate inscription "Benevolence," the letters of which were formed of quilled daisies which had an excellent effect; from the pinnacle descended a wreath of rich and various flowers, looped up upon the architraves, forming two festoons and the ends reaching from the loops nearly to the ground. The entire frame work was first covered with different kinds of evergreens on which were arranged flowers of almost every hue; so that the whole displayed a degree of taste and ingenuity extremely creditable to its constructor, Mr. H. Corse, Vice-President of the Horticultural Society."

When the van reached the arch, the procession again halted, and entered as at the Church; the Grand Lodge and Building Committee taking their station on a platform erected over the site; the Officers of the Garrison, the friends of the institution standing near the spot where the stone was to be laid, surrounded by the Brethren two deep facing inwards, behind whom was an elevated stage for ladies and another for a band of music. Everything being now ready, the upper part of the chief corner stone was raised to the sound of a solemn air; the Grand Chaplain repeated a prayer; and the Grand Treasurer deposited, in a cavity made in the lower part of the stone, a crystal tube hermetically sealed, containing two written pieces of parchment and several coins, as follows:—

First Parchment.

Montreal General Hospital.

The centre part of this building situated on Dorchester Street, in the St. Lawrence suburb, of the City of Montreal, was erected in the year of our Lord Christ, 1821, and in the second year of the reign of our Sovereign Lord, George IV (under the administration in this Province of His Excellency the Right Honourable George, Earl of Dalhousie, Governor-in-Chief of the British North American Provinces), by voluntary contributions, for the benevolent purpose of establishing a hospital, to be called the *Montreal General Hospital,* for the reception and cure of the diseased poor, and others who may not have the means or conveniency of being duly cared for when sick, at their own places of residence.

The only institution of this kind, hitherto, has been the Hotel Dieu Nunnery which although highly useful, yet the accommodations for the sick being very limitel, and their rules excluding certain diseases, it is found to be now inadequate for the growing population of this city and suburbs, which is now estimated at about 20,000 souls.

An effort, therefore, to establish an hospital upon a more extended and general plan as to residence, and embracing also the reception and cure of diseased poor emigrants from the mother country, on passing through Montreal, became indispensable, and happily has succeeded beyond expectation.

The present building is so constructed, as to be capable hereafter of a three-fold extension when needful by adding thereto a wing at each end of equal capacity with the centre. The contributors up to the fifth day of June, 1821, when the corner stone was laid with Masonic ceremony; and the amount of their respective subscriptions to this praisworthy undertaking, are as follow, viz.:—

	£	s.		£	s
Auldjo, George	50	00	David, David	12	10
Armour, Robert	5	00	DeWitt, Jacob	10	00
Busby, Thomas	10	00	Dwight, James A.	5	00
Blackwood, Thomas	5	00	Dease, Peter B.	5	00
Brown, John	5	00	Dunn, James	10	00
Bancroft, F. Charles	10	00	Esson, Rev. H.	10	00
Bagg, Stanley	5	00	Forsyth, John	50	00
Beek, J. G.	7	10	Finley, John	5	00
Bethune, John	10	12	French, Thomas	5	00
Bent, William..	5	00	Forster & Try	5	00
Beckett, Joseph..	10	00	Allen, Andrew	5	00
Clark, L. W.	25	00	Annesly, William	5	00
Clarke, John	5	00	Bagg, Abner	10	00
Carsuell, James	5	00	Brooke, Charles	12	10
Caldwell, Doctor	10	00	Babuty, E. S.	5	00

	£	s.
Brown, James	5	00
Banbury, Abraham	5	00
Bland, John	10	00
Binley, William	5	00
Barrett, J. T.	5	00
Clark & Appleton	5	00
Chapman, Joseph	25	00
Campbell, James E.	5	00
Clamp, Benjamin	5	00
Crose, Henry	10	00
Dowie, Kenneth	6	5
DeWitt, Jabez D.	10	00
Davies, George	5	00
Drummond, Robert	5	00
Ermatinger, Frederick W.	50	00
Fellows, John	5	00
Phillips, Thomas	50	00
Pierce, Jason C.	5	00
Pyke, George	5	00
Richardson, John	50	00
Robertson, David	5	00
Stuart, James	12	10
Skakel, Alexander	25	00
Sewell, Stephen	5	00
Shaw, Andrew	10	00
Sprague, William	5	00
Shuter & Wilkins	10	00
Somerville, James	6	00
Solomon & Co., L. & B. S.	5	00
Summers, John	5	00
Torrence, Thomas	50	00
Thin, Thomas	50	00
Torrence, John	25	00
Taylor & Gelston	5	00
Wragg, John	10	00
Ware & Gibb	5	00
Willard, Charles	7	10
Waite, Oliver	5	00
Wagner, C.	5	00
Woolrich & Symes	5	00
Walker, Kenneth	5	00
Grant, J. C.	5	00
Gillespie, Robert	50	00
Gibb, Benaiah	50	00
Grant, C. W.	25	00
Gale, Samuel	12	10
Gundlack, Chr.	5	00
Hutchinson, Wm.	25	00
Hart, B.	5	00
Harwood, Robert	5	00
Handiside Bros. & Co.	5	5
Henry & Bethune	7	10
Hughes, James	5	00
Hooffstetter, Chas.	5	00
Jones, John	10	00
Jones, Nathaniel	5	00
Kays, William	10	00
Leodel, Henry	5	00
Lunn, W.	7	10
Leslie, James	25	00
Molson, John	25	00
Molson, Thomas	25	00
Fisher, Daniel	25	00
Fleming, John	12	10
Ferguson, Archibald	5	00
Forbes, William	5	00
Froste & Porter	25	00
Gerrard, Samuel	50	00
Garden, George	50	00
Gates, Horatio	10	00
Gonnerman, Frank	10	00
Grey, Wm.	5	00
Griffin, Henry	5	00
Hall, N.	5	00
Hardie, Alexander	5	00
Harwood, John	5	00
Henry, James	5	00
Hurd, R. B.	5	00
Hogg, J P.	5	00
Hall, Benjamin	5	00
Jones, Isaac	5	00
Kurczyon, N.	5	00
Logan, James	6	5
Levy, Boruck B.	5	00
Lloyd, Hoyes	5	00
McGillivray, W.	50	00
Molson, Jr., John	25	00
Molson, William	25	00
McKenzie, Henry	25	00
McLean, A. N.	25	00
McCord, Thomas	25	00
McGill, Peter	6	5
McIntosh, Peter	5	00
Malcolm, Andrew	5	00
McKenzie, John	5	00
Naters, M.	100	00
Oakes, Cornelius	5	00
Moffatt, George	25	00
Miller & Parlane	25	00
Metzler, Francis	7	10
McGinnis, Richard	12	10
Mower, Nahum	5	00
Mabhut, Alexander	5	00
McGinnis, R.	5	00
McNider, A. L.	10	00
Nicholas & McDonnell	5	00
Ogden, C.	12	10
Platt, Ann	5	00
Platt, Eliza	10	00
Prime, J. B.	10	00
Ross, David	50	00
Reid, James	25	00
Stemm, William	10	00
Scott, Michael	5	00
Shaw, Angus	25	00
Sprague & Hutchinson	10	00
Struthers, J. D.	10	00
Sawtell, Luther	5	00
Shay, Isaac	10	00
Solomon, Henry	5	00
Seaver, Hemen	5	00
Try, John	50	00
Thayre, Zabdiel	10	00
Thin, Alexander	12	10
Tiffry, John	5	00
Webster, Arthur	5	00
Woolrich, James	10	00
Wurtele, George	5	00
White, Andrew	5	00
Warrick & Co., Guy	5	00
Willard, J. R.	5	00

The first Directors consist of :—George Auldjo, Robert Armour, Thomas Blackwood, William Blackwood, L. T. Barrett, I. Winslow

Clarke, Joseph Chapman, Henry Corse, Jacob DeWitt, David David, Frederick William Ermatinger, John Fisher, Sr., Samuel Gerrard, George Garden, Benaiah Gibb, Sr., Robert Gillespie, William Gray, James Leslie, William Lunn, James Millar, John Molson, Sr., Oliver William McGillivary, Peter McGill, John Molson, Jr., Adam L. McNider, Henry McKenzie, William Porter, Thomas Phillips, Hon. John Richardson, David Ross, Alexander Skakel, Michael Scott, John Try, Thomas Torrance, Andrew White and Kenneth Walker.

The directors, ex-officio are:—The Rev. John Bethune, Rector of the Parish of Montreal ; the Rev. Mr. Somerville, Mr. Esson, Mr. Lusher.

The Committee for carrying on the building are :—The Hon. John Richardson, David Ross, John Molson, the Rev. Mr. Bethune, Alexander Skakel, John Try and Dr. Wm. Robertson.

The Treasurer for the institution is Samuel Gerrard.

The Contractors for the masonry are John Redpath and William Reilly.

The Contractors for the carpenters' and joiners' work are Edward Barnett and Gordon Forbes.

And the professional superintendent of the works is Thomas Phillips, who contributes his services in that respect in lieu of a pecuniary subscription, such services being considered and accepted as equivalent to £50.

SECOND PARCHMENT.

At Montreal in the Province of Lower Canada, in the year of Our Lord Christ, 1821, and of Masonry 5821,—being the second year of the reign of our Sovereign Lord, George the Fourth, of the United Kingdom of Great Britain and Ireland, King, Defender of the Faith, His Royal Highness Prince Augustus Frederick, Duke of Sussex, Most Worshipful Grand Master of the United Grand Lodge of Ancient Free and Accepted Masons of England, and the Right Honourable George, Earl of Dalhousie, Governor-General of British North America.

This chief corner stone of the Montreal Hospital was laid in due form by the Right Worshipful Sir John Johnson, Baronet, Past Provincial Grand Master of Canada, deputed by and acting as substitute for the Right Worshipful and Honourable Claude Denechaud, Present Provincial Grand Master of the Grand Lodge aforesaid, attended and assisted by the Officers of the Provincial Grand Lodge, and the Masters, Wardens and Brethren of the three Lodges held in this city, being Nos. 8, 12 and 20 in the Registry of the said Province and in the presence of several visiting gentlemen of distinction in Free Masonry.

Coins Deposited Under the Stone.

A half crown of George IV.

A guinea, sovereign, a half-sovereign, a third of a guinea, two shillings, a sixpence, a farthing of George III.

A shilling of Ann.

An Irish halfpenny of William and Mary.

A halfpenny of James II.

The cavity was then covered with a piece of lead, and the cement being laid on the lower part of the stone, the upper was lowered on it, the band played Rule Britannia. Being adjusted, it was at the request of the Grand Master tried by the plumb, square and level by the Deputy Grand Master, Senior and Junior Wardens, and being found correct received three knocks with the mallet from the Grand Master who pronounced the following benediction—"May the great Architect of the Universe grant a blessing on this chief corner stone which we have now laid ; and by His providence, enable us to finish this and every work which may be undertaken for the embellishment and advantage of this city."

Three cheers succeeded ; a royal salute was fired from Mr. Dillon's small park of artillery ; and the band played our great National Air, God Save the King.

Next the Cornucopia was handed to the Grand Master, who sprinkled the corn on the stone, and the Brethren marched round the site of the building to the sound of music. Wine, in a silver cup, was next presented to him, sprinkled as the corn, and the tour repeated. Lastly, oil, in a cup of the same metal, was sprinkled with the same formalities. The plan and elevation of the intended edifice was then delivered to the Grand Master, who having attentively examined it, returned it to the architect, desiring to see the work completed according to that plan. Finally he ascended the platform, to the sound of solemn music, and addressed the Brethren and gentlemen as follows :—

Brethren and Gentlemen :—

"I feel much pleasure in having the honour of laying the chief corner stone of a building which promises to be of so much utility to Montreal and the adjacent country. I congratulate my fellow citizens on the rapid growth and very flourishing state of the city, which is evinced by the many useful and ornamental buildings, both public and private, which have lately been erected and are now in operation. I also congratulate them on the many valuable institutions that have lately been established, of all these buildings and institutions the Montreal General Hospital here to be erected, will rank amongst the first as being a neat and commodious building which appears from the plan now exhibited and which does much credit to the architect, and also on account of the valuable purpose for which it is intended, namely, the relief of those suffering under the double calamity of poverty and disease. Much praise is due to those who were the first promoters of this institution, for their benevolence, liberality and activity in promoting so laudable an object.

"My sincere wish is that they may be enabled to finish the work which is here begun, and that this institution may be the means of all that good which its nature and the plan on which it is commenced is so evidently calculated to produce."

The Honourable John Richardson, President of the Building Committee, then addressed the Grand Master as follows:—

"In the name of the Building Committee, the Directors, and the subscribers of and to this Institution, I return their and my warmest thanks to the Honourable Sir John Johnson, Knight and Baronet, and his worthy Masonic Brethren, who have so handsomely come forward on this occasion, and acted with such becoming solemnity and dignity, to give due effect to the ceremony which we have just witnessed.

"Such cannot but produce the happiest effects in impressing upon the public mind, the utility and benevolence of the institution for which the building now commenced is intended.

"I hope and trust this will tend to augment the list of subscribers. thereto, and that every person who can at all afford it, will contribute his mite ; as further aid will yet be needful for finishing that part of the general plan which is now intended to be completed, in order to apply to the present state of the population of this city, leaving to those who may follow us to extend and perfect the remaining part of the plan when necessary.

"A short history of the origin of this institution, with a list of the present subscribers and other particulars, which having been engrossed on parchment is enclosed in a glass tube, hermetically sealed, and including some national coins of gold, silver and copper, has been deposited in the corner stone of the building as a memorial to future ages of the facts, should accident be had to the glass tube by any future accident."

This speech was followed with three cheers.

A purse containing money for the workmen was then handed by Samuel Gerrard, Esq., Treasurer to the institution, to Henry McKenzie, Esq., Grand Treasurer, and by him, at the request of the Grand Master, placed on the stone.

The ceremony having ended, the Officers of the Garrison and gentlemen of the Committee left the procession, and the Masonic Brethren returned in the same order to the City Tavern which they reentered by the same evolution as they did the Church. The usual formality of closing terminated the business of the day.

During the whole of this procession and ceremony, there prevailed the greatest order and decorum, both amongst those engaged in them and the spectators. The fineness of the weather, with a gentle breeze, gave a fine effect to the flags, jewels and other Masonic insignia, and the benevolent nature of the object in view inspired a feeling of interest that was expressively depicted on the countenances of the vast multitude which thronged the streets and windows.

The ships in harbour were all decorated with flags, so that everything wore the appearance of some great public rejoicing."

During the erection of this building the former Hospital was still in operation. We find from the month of May, 1820, the time at which it was opened, until May, 1821, there had been expended in maintaining it £378 10s. 7d., and, independent of what had been raised by contributions to erect the new building, there had been collected and paid to the Treasurer, Samuel Gerrard, Esq., a gentleman to whose liberality the City of Montreal is much indebted for the completion of this valuable establishment, the sum of £145 9s. 4d., and on the first of May, 1822 at which time the present building was opened for the reception of patients; and when the whole of the former establishment was removed into it, there was a debt due the Treasurer for the former Hospital amounting to £203 15s. 3d. The following extracts from the Secretary's Report read the first of May, 1823, one year after this establishment had been commenced, will exhibit the expenses of the building, and give an idea of the amount of benefit which was reaped from it during that period.

" During the progress of the work it was deemed highly expedient to follow the method adopted in the Derbyshire Hospital, in England, to warm the building by air heated by a furnace placed in the basement story. Even though no saving should arise from this method, the convenience of supplying the fuel, the cleanliness, the small risk of fire being communicated to the building, were considered a sufficient reason for its adoption, and they will be, it is hoped, an adequate compensation for the money expended in its construction. A cupola was also added to serve as an ornament to the building, and to give light to an operating room—the latter of these objects, from the distribution of the interior, could not be effected. It was found indispensably necessary to erect some out-buildings. Instead of the wooden fence which formerly surrounded the ground, it was thought proper to enclose it on two sides with a stone wall, and on the front with an iron railing erected on a foundation of stone."

To give a detailed account of the money expended in completing those works would extend this report far beyond its due length; an abstract only shall therefore be given. It is as follows:—

Dr.

The Montreal General Hospital,
To Samuel Gerrard,

1823				
May 1st.	To amount of accounts paid as per detailed account..	£4,556	8	0
	To cost of the land purchased from Marshall.	1,300	0	0
	Cost of the Hospital..	£5,856	8	0
1823	Cr.			
May 1st.	By subscriptions received to this date..	£2,167	10	0
	Due to Treasurer..	£3,688	10	0

"This sum has been advanced in equal shares by the Honourable John Richardson, the Honourable William McGillivray and Samuel Gerrard, Esq."

"Though the Hospital has cost much more than the estimate mentioned above, it is to be remembered that many additions have been made to the original plan, which were not at first contemplated, and that that estimate was merely of the building itself, exclusive of any appendages. Those capable of judging, who have seen it, consider it to have been erected at a very cheap rate."

"To estimate the good that will arise from this institution, it is only necessary to notice that which has already been done by it, even when cramped in its utility for want of funds. This will appear from the following statement:

"The number of patients admitted from May 1st, 1822, to May 1st, 1823, with those brought from the temporary Hospital is 421.

"The number of patients that have received advice and medicines as out-patients for the same period is 397.

"The total number of patients who have received benefit from the Hospital during the last twelve months is 818.

"This great number of indigent human beings have in their sickness been carefully attended, and everything in the power of human beings done for their recovery. The consciousness of having contributed to alleviate the sufferings of so many fellow-creatures is alone no small return for the sum annually bestowed by each individual for the support of the Hospital. But this is not all. Several of those, according to the Physicians' Report in August last were labouring under typhus fever. By means of the Hospital this disorder was prevented from spreading among the inhabitants. The alarm that was excited about 24 years ago by the arrival of a regiment infected with this disease must still be in the recollection of many. In supporting the Hospital, therefore, we not only relieve the distresses of suffering humanity, but we use the best means to prevent those distresses from reaching ourselves."

The expenditure of the Hospital taken from the Treasurer's account from May 1st, 1822, to May 1st, 1823, amounts to				£1,036	1	6
From this sum is to be deducted on account of debts contracted during the time of the temporary Hospital				203	15	3
Expenditure for the last twelve months				£832	5	3
Drawn from the Treasurer, as above				£1,036	1	6
Received from pay-patients	£ 31	4	6			
Annual subscriptions	413	0	7			
Two old boilers, etc.	6	0	0			
Sundry public collections	127	0	0			
Sundry donations	47	17	3			
Funds received by the Treasurer from May 1st, 1822, to May 1st, 1823				£ 625	12	8
Due the treasurer on account of the current expenses of the Hospital				410	8	10
To this add the debt contracted on account of the building				3,688	18	0
Total debt of the Hospital				4,099	6	10

In the session of 1823, the Provincial Legislature, on the recommendation of His Excellency the Earl of Dalhousie, then Governor-in-Chief, granted the sum of £850 currency to defray the annual expenses of the Montreal General Hospital, and the same season a further mark of favour and patronage was extended to it by granting it a Charter of Incorporation under the following Letters Patent:—

THE CHARTER.

DALHOUSIE, GOVERNOR,

George the Fourth, by the Grace of God, of the United Kingdom of Great Britain and Ireland, King, Defender of the Faith,

To all whom these presents shall come, GREETING:

(Here followed the full charter.)

Hitherto this Hospital has been governed under the rules and regulations of the former with only such alterations or amendments, as might be considered necessary for its enlarged scale. Some further alteration, however, was required in conformity with the tenure of the charter. To make these alterations a meeting of the directors (now called by the Letters Patent Governors) was held, and a committee formed for the purpose. These drew up from the previous rules, and in conformity with the provisions of the charter, a code of laws which were submitted and approved of at a general meeting in April, 1823, by which the institution is governed and under which it has attained a state of prosperity, perhaps unparalleled in any establishment of the kind, which had its origin from so small a beginning, and has only been in existence for so few years.

There is one circumstance connected with this institution which deserves to be particularly noticed; although it is from motives of the most commendable nature, in such a state that an attempt to seek its origin or enquire from whence this benefit sprung would be, perhaps, committing a violation on feelings of the most pure and delicate description. It will be observed from the statement of the expenses above given that in the month of May, 1823, there was a debt upon the establishment amounting to £4099. 6. 10., at a subsequent meeting, the Directors had the high gratification to learn from the Honourable John Richardson, that means had been found to discharge that debt, and although not permitted to state the source from whence this truly benevolent action had emanated, he had to congratulate the Directors and the public of Montreal in having now a splendid building appropriated for the relief of the distressed erected, and an establishment in operation on such a scale as the population required, free from all incumbrance.

Independent of the strong public feeling on behalf of this establishment in Montreal, and the support it is expected it will receive through Legislative provision, it has become the object of individual charities. The late David David, Esq., for many years a respectable merchant in this city, on his death bequeathed to the Montreal General Hospital a legacy of £100 currency, which has been judiciously laid out in purchasing a building adjacent to the Hospital grounds by which they are enlarged, and an annual revenue will be derived from the rent of it. To render the establishment complete in all its branches an Apothecary has lately been engaged for it ; whereby a considerable saving will occur to the establishment in having its medicines compounded in the place.

Their Medical Department consists of :—Drs. Caldwell, Robertson, Holmes, Loedel and Stephenson, the last of whom acts as House Surgeon.

These, with a matron, three nurses, and the necessary servants and attendants constitute the establishment. The benefits resulting from it have already been sensibly felt. By the last annual report published in May, 1824, it will be seen that the advantages of the institution are progressively extending.

Admitted from 1st May, 1823, to 1st May, 1824.

	Protestants.	Roman Catholics.	Total.
	254	316	470
Outpatients who received advice and medicine	254	110	364
	508	326	634

Of these were discharged :

Cured	378
Relieved	30
At their own request	16
For misconduct	2
Died	43
	469

Remaining in Hospital, 20.

The increase in the number of patients during the year is 115.

Thus we find this Hospital commencing from a circumstance trivial indeed, when compared with the degree of magnitude it has attained. We find through every stage of its progress an ardent zeal for its promotion actuating all concerned in establishing it ; and we find these efforts crowned with a success equal to the most sanguine expectations they could form. The good and prudential management hitherto manifested in conducting every department, and the salutary regulation made for it, give a promise that it will continue to future generations a striking proof of what can be accomplished by small means when guided by well directed efforts.

The expenses of this institution are derived from three sources—1st, legislative grants as before mentioned ; 2nd, charitable donations, public subscriptions, and the annual contribution of the Governors and other subscribers ; 3rd, from the sale of tickets to the students of Medicine in the town, who are by the rules of the institution allowed to attend to see the Hospital practice and witness the operations, on paying each the sum of two guineas per annum.

APPENDIX.

I.

MONTREAL IN 1815.

A Topographical Survey of Lower Canada, by Joseph Bouchette, Esq., Surveyor-General, Montreal, 1815.

Bouchette gives the following account of the improvements being projected and carried out under the Act of 1801.

"When the Act that was passed in the Provincial Parliament in 1801, for removing the old walls and fortifications surrounding the City of Montreal, and otherwise to provide for the salubrity, convenience and embellishment of the said city, shall have been carried into effect, according to the plan projected, none of the external possessions of England, excepting its Eastern Dominions, will embrace a town of so much beauty, regularity, extent and convenience, as this. Part of these alterations, as far as the sums hitherto assigned would enable the Commissioners to proceed, have already been made and the remainder will be continued as fast as further funds become applicable. These improvements are intended to be as follows :—

'An elevated terrace extending from the suburbs in the southwest of the city, along the river as far as the Quebec Suburbs, which, independently of its utility as a road, will be sufficiently high to form an effectual barrier against the floating ice at the breaking up of the frost ; it will also impede the communication of fire to the town should it take place among the large quantities of wood and timber of every description that are always collected on the beach. The little river of St. Pierre is to be embanked on both sides as far as the new College, forming a canal 20 feet wide, which is to be continued southwest and northwest to the Quebec Suburbs, with bridges over it at the openings of the principal streets and other convenient places ; at the angles ornamental circular basins are to be formed and a lock near the mouth of the little river, by which the water may be drawn off for the purpose of cleansing it. This work will be so constructed as to raise boats, etc., from the St. Lawrence, from whence they may proceed to the further extremity of the canal. The buildings on each side are to be retired 30 feet from the water, thereby forming a street 80 feet wide, having the canal in its centre. To the northward of Notre Dame is to be another parallel to it, 60 feet wide, called St. James Street, running the whole length of the city and terminating at the Quebec Suburbs by one of the same breadth leading to the St. Lawrence. Between St. James Street and the canal parallel thereto and running in the same direction will be a street of 24 feet wide. Where the Quebec gate now stands will be formed a square 174 feet by 208 extending towards the suburbs. The Place d'Armes is to have its dimensions enlarged to 392 feet by 344, which will protract it to the canal. From the south-west side of the canal towards the St. Antoine Suburbs, another square or rather parallelogram, will be made 468 feet by 180. The Champs de Mars from being very circumscribed, and quite inadequate as a place of military exercise, will be made level and carried on nearly to the canal, to form a space 227 yards by 114. This has been nearly completed and it is now an excellent parade as well as an agreeable promenade for the inhabitants; seats are fixed for the accommodation of the public and trees planted in various parts of it. From this spot there is a fine view of the well cultivated grounds beautiful orchards and country houses towards the mountains. Adjoining the new college a lot of ground 156 feet by 258 is reserved as the site of a new house of correction. The new market place occupying the ground where formerly stood the college, founded by Sieur Charron in 1719, and destroyed by fire a few years back, has been finished according to the proposed plan; it is 36 yards wide and reaches from Notre Dame to St. Paul Street. In the middle of it are ranges of stalls for butchers, covered in by a roof supported on wooden pillars; great care is taken to ensure cleaniness in this part. The two principal market days in each week are well supplied with every necessary, and nearly every luxury for the table, in great abundance and at prices extremely moderate. The produce of the upper part of this fertile district is almost wholly brought thither for sale, besides a great quantity from the American States, particularly during the winter season, when fish frequently comes from Boston and the adjacent parts. The whole of the plan sanctioned by the Act of Parliament has been arranged and acted upon by Commissioners appointed under it, who have for years been indefatigable in their exertions to carry its provisions into effect. As their duties have been arduous and frequently unpleasing, from the numerous lawsuits they have found it necessary to institute and defend in cases of disputed claims, they are entitled to the esteem of their fellow-citizens for the manner in which they have always performed those duties to the public gratuitously.' "

IMMIGRATION.

II.

In a sketch of conditions prevailing in the city previous to 1856, prepared for the celebration of the opening of the Grand Trunk Railway, it is stated:—

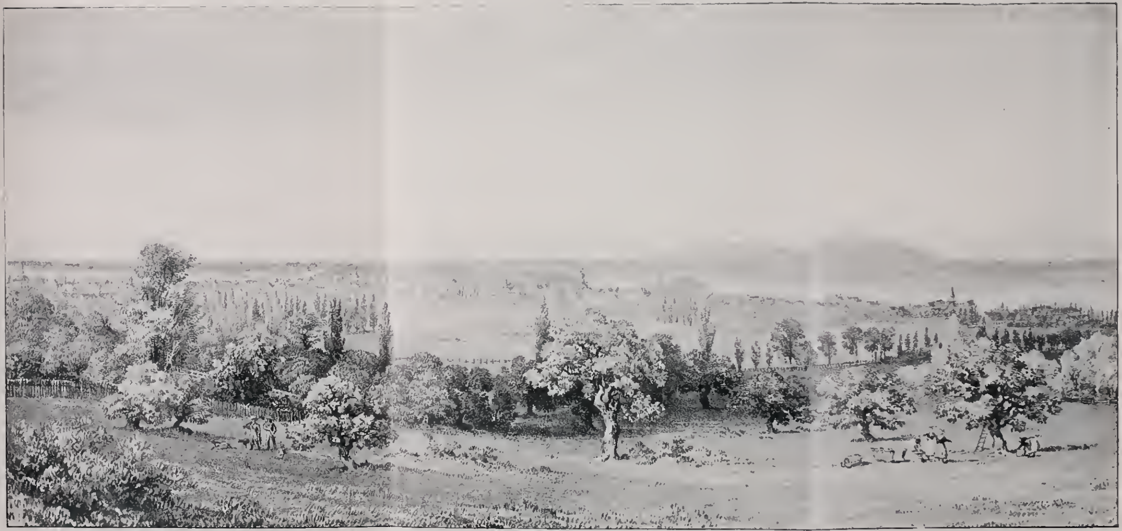
"In the year 1812, 53 vessels entered the Port of Montreal.
In the year 1813 (during the war with the United States,) 9 vessels.
In the year 1814, 13 vessels.
In the year 1815, 32 vessels.
In the year 1816, 63 vessels.
In the year 1817, 46 vessels."

THE FEMALE BENEVOLENT SOCIETY.

III.

The first announcement of the Female Benevolent Society appeared in the Montreal *Gazette* of Feb. 26th, 1816, and reads as follows:—

"A number of ladies deeply impressed with the destitute situation of the poor in this place and solicitous if possible to mitigate their sufferings, have formed a Society for relieving indigent women with small children, the sick, the aged and the infirm. This assocation shall be called the *Female Benevolent Society of Montreal.*



VIEW OF THE CITY OF MONTREAL IN 1830. Taken from the Mountain.

Published by Bouchette in 1832

"*Contributions:* The funds shall be raised by annuities, subscriptions and donations. Members will be admitted by paying 25 shillings annually into its funds. Ladies who do not wish to become members yet are willing '*to feed the hungry, clothe the naked, and minister to the sick,*' through the medium of the Society, and gentlemen will be permitted to subscribe, and their names enrolled with pleasure on the list of benefactors.

"*Management:* This shall be vested in a Directress, Secretary and Treasurer, with twelve Managers, who shall be chosen annually by a plurality of ballots.

"The Directress shall preside at meetings both of the Society and Managers, state questions, declare decisions and in all equal elections have the casting votes.

"The Secretary shall be the organ of communication to and from the Society, give notice of all meetings, regularly attend them and record their proceedings; in her absence there will be one chosen to supply her place.

"The Treasurer shall receive the annuities and donations and keep a regular account of all collections and expenditures, in a book provided for that purpose, which together with the books of the Society shall be submitted at their stated meetings.

"Managers: Two shall be appointed for each week, to visit the poor, enquire into their circumstances, administer necessary and appropriate relief, and endeavour to stir them up to industry, order, neatness and economy—to make them useful to their families and better members of Society. And they shall give at the stated meetings such information as they may acquire respecting objects of charity, particularly worthy their attention, and render an account of the manner of their distributions. They shall meet on the first Monday in every month; three shall be competent to proceed to business and the Secretary and Treasurer shall have a seat at their Board.

"The Society, shall meet twice a year; namely on the first Tuesday in February and the first Tuesday in September, the former to be considered the anniversary of the Society. Twelve members will be sufficient to transact business—each member shall be at liberty to propose an object, and when their character and situation are investigated, relief shall be afforded in necessaries and not in money. It shall be an object of the Society to obtain and keep on hand, such stores as clothing and other necessaries as they shall judge most proper to be given or lent, in cases of immediate necessity. Articles of wearing apparel, bed clothing, provisions, or in fact anything which can promote the grand object of the Society, the comfort of the poor and destitute, will be thankfully received and judiciously distributed. Should there be any surplus of donations or contributions, unexpended at the end of the year, it shall be appropriated as an increasing fund; the interest (except in cases of peculiar demand) being added to the principal until it becomes sufficient to establish and support a school, where the children may be instructed in the most necessary branches of education, may be taught 'that the fear of God, which is the beginning of wisdom,' and those habits of industry, order and economy which will best form them to become useful members of the community.

"The sum already received in aid of the above institution amounts to about one hundred and fifty pounds, any further contribution to carry the object of the Society into effect either by subscription or donations, will be addressed to Mrs. Aird Treasurer of the Society."

In the *Gazette* of Aug. 26th, 1816, the first semi-annual meeting of the Society is announced for Sept. 11th, at 2 o'clock, at the Rev. Mr. Easton's Meeting House, and on Feb. 4th, 1817, at the house of Geo. Platt, Esq., St. Paul Street, the first annual meeting was called.

In the *Gazette* of Feb. 17th, 1817, appears the following letter from the President, Mrs. Benaiah Gibb:—

To the ladies composing the Female Benevolent Society: Having been prevented by indisposition from attending at your meeting on the 3rd inst., permit me through this channel to return you my sincere thanks for the honor you have conferred on me in again appointing me your Directress in my absence. It is truly gratifying to me to find that my humble endeavours to promote the objects of this infant institution have met your approbation, and on this occasion I acknowledge with much pleasure the kind advice and assistance which I have constantly received from the Treasurer, Secretary and Managers of the Society, the zeal which they have invariably manifested in the discharge of their respective offices reflects the highest credit on the benevolent motives which have animated their exertions. As it is my duty to contribute all in my power to the advancement of this establishment so it will be a source of the happiest reflection to my mind if I should be instrumental in extending its influence and increasing its resources. The relief and comfort which have been afforded the distressed objects of your bounty have called forth the unfeigned tears of gratitude from hundreds, and cannot fail of its reward from the great Author of all good.

With sentiments of personal consideration and esteem,

I am, Ladies,

Your most obedient and very humble servant,

ELEANOR GIBB."

The Third Annual Report of the Female Benevolent Society appears in the Montreal *Gazette*, of February 17th, 1819, as follows:—

FEMALE BENEVOLENT SOCIETY.

"The Female Benevolent Society of this city met on Tuesday morning, at the Scotch Presbyterian Church, St. Gabriel Street. Several ladies of the first respectability were present, who have not before honoured the meetings of the Society.

"The subscriptions and donations of the members were then received, after which the transactions of the members during the first year and the present state of the Society were laid before the meeting by the Secretary. From this statement it appears that 89 persons were relieved from the funds of the Society last month. The number of recipients for the past year was 370, 50 of whom comprising superannuated men and women, orphans and widows whose infant families deprived them of the power of earning their subsistence, and the victims of lingering maladies, had been supported for many months. *Thirty-seven invalids have been received at different periods during the last twelve months in the House of Charity, rented in the Recollet Suburb.* In this house also the Charity School is kept, which was commenced in June

DR. R. P. HOWARD (Dean, 1882).

and contains from fifty to sixty children. Very few of these could read or write when they were admitted, and many of them it was necessary to clothe before they could decently attend. The most indigent received instruction and books gratuitously, but those parents who are able to contribute something towards the education of their offspring pay 2s. 6d. per month and purchase books.

"They are taught reading, writing, arithmetic, making linen, mending clothes, etc. Many of the little girls can do coarse work very well, and any ladies who will have the goodness to send such to the school will confer a benefit on the children, for whom it is not always easy to find suitable employment.

"The Treasurer's account was laid before the Society.

"By a provision of the Constitution any money remaining unexpended in the hands of the Treasurer at the end of the year is appropriated as an accumulating fund for the support of the school.

"Officers for the ensuing year elected.

The Female Benevolent Society,
In account with the Treasurer

	£	s.	d.
To sundry disbursements to this date for order of the Managers.	402	6	11½
To balance in the Treasurer's hands this day..	30	6	4½
	£432	13	4
Feb. 3:	£	s.	d.
By Balance in Treasurer's hands per acct. this date..	8	13	11
By amount of subscriptions from 58 members..	72	10	
By amount of donations received to this day..	351	9	5
	£432	13	4

Montreal, Feb. 13th, 1819."

In the fifth annual report of the Female Benevolent Society, published in the Montreal *Gazette*, for February 14th, 1822, the following interesting allusion to the Montreal General Hospital occurs :—

"518 individuals were sent by the Emigrant Society to the Upper Province in the course of the summer, and our recipients have been correspondingly fewer than last year, for a large proportion of them are strangers. But this circumstance has prevented those measures of public charity which were then resorted to as it was considered that the diminished number of the poor precluded the necessity of such a provision. This is now, therefore, the only charitable institution to which the remaining poor (and they are not a few) can look for succour, except the *General Hospital which, in sickness, is a blessed resource. So that we have the honour of being in a humble degree coadjutors, for the convalescents whom the physicians are often obliged to dismiss before their perfect recovery, in order to make more room for more pressing cases, are frequently received into your house and nourished there till* their recovered health enables them to gain their own subsistence. Were this not done they would probably soon relapse, and the Hospital would be unable to retain its sick."

IV.

Letter from Andrew Smythe, to the Duke of Richmond, through Major Bowles, giving details of proposed Hospital.

Montreal, October 13th, 1818.

Sir:—

"I have been honoured with your letter of the 8th ulto. communicating His Grace's approbation of a Charitable Hospital establishment here and of his wish to receive a more detailed plan, which I now beg leave to transmit for his consideration. For this establishment the first requisite is a centrical, dry, capacious and well ventilated building, three stories elevated above ground and one underneath, to be properly divided into large rooms or wards for the reception of patients—but a sketch of the first range of wards fit for an Hospital will give His Grace a better idea of the interior of the building than anything I can write on the subject. The first, or ground story, will suffice for the servants, etc., of the establishment, the second, third and fourth, for six large wards, each capable of containing fourteen patients, twelve side rooms each capable of containing two patients, a hall and surgery in the centre of the second story, a consultation room in the centre of the third and an operation room in the centre of the fourth story.

"This building I recommend to be made of brick as it will become much sooner dry than a stone wall and consequently more serviceable for the purpose. In the plan I recommend uniformity and room to extend the establishment without injuring its symmetry. The plan will accommodate about 100 patients, but cutting off the three wards marked with red ink, which may be added at some future period, the house will contain about fifty. I have consulted the best architects here respecting the probable amount of a building like the above which I also beg leave to submit:—

"If built to contain 100 patients it will cost £7,000, and if only to contain fifty it will cost £5,000. Supposing the plan agreed on and ample means collected, a person is wanting to direct the execution of it, for I hazard nothing in asserting that an hospital will never be established here, if it be left to the direction of voluntary individuals. The second requisite, viz.: how is this establishment to be supported? is not easily solved. Servants and some other of the laboring classes might be able to pay at the rate of one shilling per day to the hospital during their residence therein, but there are many who are unable to give anything whatever (for whom the establishment is more immediately recommended by me) that must be paid for from voluntary donations or subscription or from the resources of government. It will require about one shilling daily for the support and medicine of each patient, during his residence in hospital. For a trusty matron to be responsible for hospital furniture, cleanliness and regulation of diets as prescribed by medical attendants, 2s. 6d. and for as many nurses as may be wanted at the rate of 2s. each per day, fuel and candles not specified in the above statement. The last requisite is a medical person of trust to have the direction of the establishment, to be accountable for all donations or monies paid into, to make a quarterly report of the number of patients admitted into, discharged from and remaining in hospital, drawn up in the form of a nosological table and published in one or more of the Provincial newspapers, as also a statement of the money received and total expenditure of the hospital during the same period. This Medical Director to call one or more of the Faculty in Montreal to prescribe diet and medicine gratuitously for one, two or three months, after which to be succeeded by others and so forth. But in all operations the whole medical men of the place to be invited to give their opinions and aid if required.

"It is quite unnecessary to enter more into the minutiæ of Hospital Practice, which must be similar to the most approved plans throughout the British Empire. I shall sum up what is wanted for this desirable establishment.

"A portion of ground to build on; a house such as that I have been recommending and a person to have the direction and responsibility of it. With exertions a sum of money might be raised here to defray annual expenses but I am doubtful whether a sufficient sum could be raised in Montreal to purchase a lot of ground and to build a fit house for this much wanted institution. The great difficulty lies in procuring the ground and building the house; this being got over the people will then feel an interest in the welfare of the establishment. I mention this as the only difficulty in order that His Grace the Commander of the Forces may cause such measures to be adopted as will totally obviate it.

"Thus have I submitted for the consideration of His Grace the Duke of Richmond, a short description and plan of a house suitable for such an establishment with the cost of the building as also the manner in which it ought to be superintended and conducted. But I am not able to detail any plan for raising the necessary sum of money for purchasing the ground, building the house and procuring hospital furniture such as bedding, etc., etc., without voluntary subscription which I fear would fall greatly short of the sum required for this desirable object.

In the meantime I have the honour to be,
Sir,
Your most obedient servant,
AND. SMYTHE.

Major Bowles, Montreal, 13th October, 1818.
Military Secretary, etc., etc.
(Canadian Archives, Series C., Vol. 292, p. 95.)

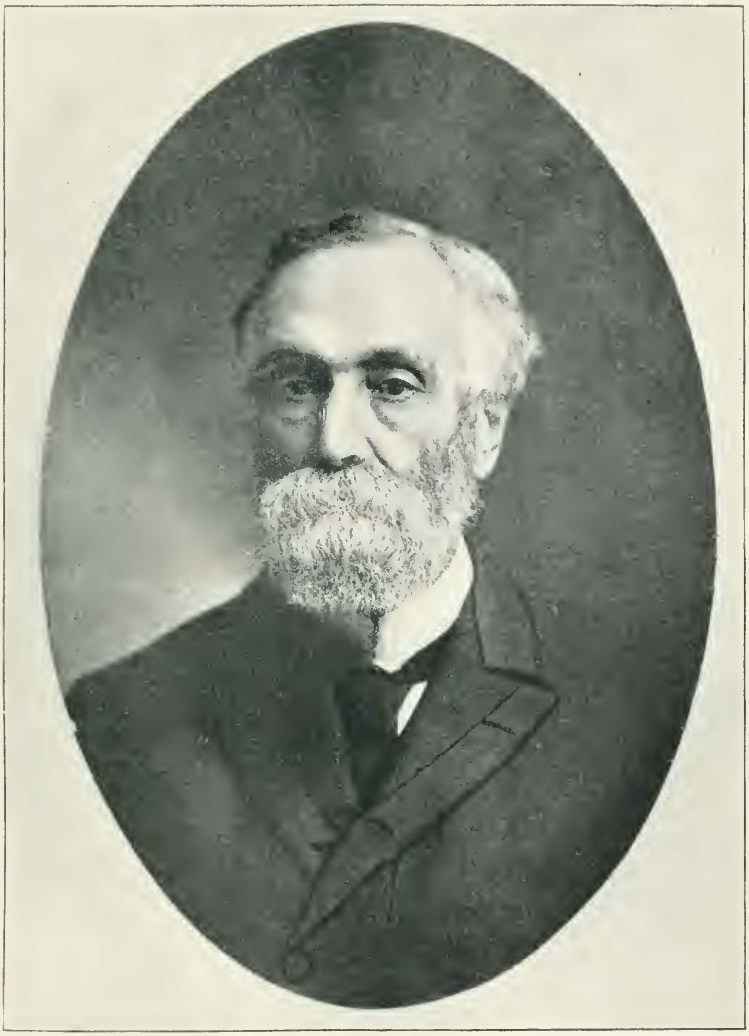
V.

O'SULLIVAN'S SPEECH AGAINST THE HOSPITAL.

Mr. O'Sullivan's speech against Mr. Molson's motion "To Resolve that it was necessary to establish a public hospital at Montreal" may be fairly said to lend a biased view to affairs, but it gives such a good idea of conditions prevailing at that time that it deserves to be reported.

Mr. O'Sullivan said that when it had first been in contemplation to frame the petition before the Committee, an opportunity had been afforded him of participating in the proceedings. That honour he had been under the necessity of declining, that he might not be considered as pledged to the support of a measure which was to be discussed in the House. He was disposed to give the Hon. Member (Mr. Molson) and the petitioners every credit for their benevolent views, but he was under the necessity of differing with them as to the plan proposed. The petition prayed for the establishment at Montreal of a public hospital, capable of containing at least two hundred patients. One of the grounds urged in favour of it was the great influx of emigrants. He (Mr. O'S.) thought it a fallacious one. It was true that the state of things in the Mother Country had caused the strong tide of immigration to extend itself to Canada. The good people at home had imagined that our fields flowed with milk and honey. They would, no doubt, have formed a valuable acquisition to Canada in every point of view, but not finding here that protection which they had been led to expect, they became mere birds of passage, a few stragglers who had not the means of keeping up with their respective flocks had been left behind. Some of them had become sickly and destitute. Our medical alarmists had spoken and written a great deal about typhus and contagion, but the charity of Quebec and Montreal had been found sufficient for their relief. Everything seemed to be again seeking its proper end, and surely the Hon. Member would not allow his humanity so far to mislead his judgment as to argue that in order to remedy a temporary evil, it was necessary to create a permanent establishment. In differing with the Hon. Member as to that part of the subject, he (Mr. O'S.) was ready to admit that the increase of population required that something should be done. If the Committee thought the present establishment insufficient, it became necessary to enquire how the insufficiency was to remedied. With respect to the project in view he saw amongst the papers before him a plan of a most magnificent building, three stories high, 192 feet long, capable of containing ninety-six persons, besides apartments for consultation, apartments for dissection, apartments for lectures, in short a medical college. It was worthy of remark that the petition spoke of at least 200 patients, and that the estimate only provided for 96. He (Mr. O'S.) found the prices in that estimate extremely low. Would it be credited that such a large edifice was to be completed and furnished with every necessary article for £10,000 ? This might do to begin with, but it would certainly cost more than double that sum when finished ; witness the prison at Quebec, the castle at St. Louis and every other public building. The petitioners had built their hospital without having thought of a very essential thing, namely, the lot of ground upon which it was to stand ; this would form no inconsiderable item. The next question was, how was the establishment to be supported ? Mr. O'Sullivan here entered into a detail of the expenses ; he enumerated the staff of officers which it would be necessary to create and who, of course, must all be paid. It was a pity the petitioners had not thrown a little light on that part of the subject ; upon the whole a rough guess might easily be formed as to the annual amount ; and was all that to be paid by the Province ? If not, would it be fair to saddle the whole district with such an immense burden ? Or, rather, was not the whole plan too gigantic ? People were too much in the habit of taking their ideas from English institutions. We could not go to a better source for examples of generosity, but our admiration should not make us overlook our means. How much of the substance of the sick poor was there not wasted in salaries and fine entertainments at which there were always a great many toasts and fine speeches. Such establishments were beyond our wants.

What plan was there to be adopted ? He would propose one solution



DR. ROBT. CRAIK (Dean, 1889.)

the petition itself seemed to suggest. It stated, and he believed correctly, that the funds of the Hotel Dieu were insufficient. The remedy was at hand. The Legislature had just given a sum of money to the Hotel Dieu at Quebec. A sum of money might also be given to the Hotel Dieu of Montreal. There was an appendage to the Hotel Dieu at Montreal called the Salle Royale, which he understood could afford accommodation for 50 sick. He had been informed that the nuns were anxious to convert it to that end ; afford them the means of doing so and the petitioners have all they want at a trifling expense. This affiliation of the old establishment might be placed under such regulations as should be deemed necessary, but the care of the sick should be left to the nuns. How different their conduct to that of hirelings ! The sublime motives which animated these Religious Ladies produced maternal affection. What else could induce them to perform the most humiliating duties, with what tender anxiety they watched by the sickbed, soothed the pain, anticipated the wants of their suffering brethren, no matter of what religion or nation! It had been observed that persons afflicted with certain diseases were not allowed admittance ; surely no one would even think of introducing contagious or incurable disorders. To incurables an hospital was useless ; they found an asylum in another institution, that of the Sœurs Grises. Whether contagion had lately existed here was a question which he would leave to the learning of the faculty, and proceed to the evidence adduced in support of the petition.

Three medical gentlemen, resident at Quebec, had appeared before the Committee to show that an additional hospital was necessary at Montreal. One of them, of whose professional merit he had heard a great deal, and whose special duty it was to watch over the health of His Majesty's subjects, is stated by the report of the Special Committee to have said, "That the religious hospital institutions have hitherto been of great use in this Province, but in the present state of increased population and perfection of medical science, are totally inadequate for the public wants of such a large city as Montreal." He (Mr. O'S.) read from the Report itself. The Report further mentioned that a second gentleman, also of very great respectability in his profession, had appeared before them and confirmed the above. These two gentlemen agreed with a third in stating that hospitals had greatly contributed to promote "the perfection of medical science, an object always to be held in view in institutions of that kind." These were certainly very frank and very important disclosures ! An object always to be held in view was the perfection of medical science. An hospital contributed to that perfection because, no doubt, it afforded the best opportunities to make experiments. Now, one of the consequences of the perfection of the said medical science was to render the hospital totally insufficient for the public wants. Thus an hospital and the perfection of medical science have alternately cause and effect and must constantly reproduce each other in a very destructive ratio. . . . . . When he (Mr. O'S.) reflected not only on the fatal perfection of the redoubtable healing art, but on the great increase of the Faculty in Montreal he trembled for the fate of his fellow citizens. Certain it was from the evidence of these gentlemen, as stated by the Special Committee, that both these causes must prevent in future that rapid increase of population which had induced the unsuspecting petitioners to make the present application.

He concluded by saying that he would vote against the motion.

VI.

THE CORNER STONE OF THE MONTREAL GENERAL HOSPITAL.

Montreal *Gazette*, June 6th, 1819: The Montreal General Hospital "Yesday the ceremony of laying the corner stone of the building intended for the Montreal General Hospital took place. We have not been able to be particularly informed of everything which passed on this occasion. The Masonic procession, which was very numerous, accompanied by the band of musicians, a detachment of the 60th Regiment, set out at mid-day from the City Tavern by the way of McGill and Notre Dame Streets to the church in St. Gabriel Street where divine service was performed and a discourse suitable to the occasion delivered by the Rev. Mr. Somerville. The procession afterwards proceeded to the site of the edifice, the corner stone of which was laid by the Hon. Sir John Johnson, Baronet. The procession then returned about four o'clock by St. Paul Street to the City Tavern to dine."

VII.

DR. SKAKEL'S LECTURES.

The first announcement of Dr. Skakel's lectures on Natural Philosophy seems to have been in 1813. They are advertised in the Montreal *Herald* for Oct. 30th, of that year:—

"Mr. Skakel will during the winter give a course of lectures on Natural Philosophy. The course will begin on Wednesday, Nov. 19th. Those who wish to patronize the undertaking may, by calling at his house, No. 20 St. James Street, see a prospectus of the lectures and be informed of the terms."

VIII.

THE MEDICAL ACT OF 1788.

An Act "to prevent persons practising Physic and Surgery within the Province of Quebec, or Midwifery in the towns of Quebec or Montreal" had been passed in 1788. It provided that, "no persons should practice medicine or surgery within the towns of Quebec or Montreal or in the suburbs thereof, without a license first having been obtained from His Excellency the Governor, or the Commander-in-Chief of the Province, for the time being, which license shall not be granted but upon certificate of the person applying for the same, having been examined and approved by such persons as the Governor or Commander-in-Chief for the time being may have appointed."

Under this Act Boards of District Examiners seem to have been appointed yearly for each of the two cities of Quebec and Montreal. The examiners for the District of Montreal for the year 1819 were, Henry Loedel, Dr. Arnoldi and Wm. Robertson. (Neilson's Almanac, 1819).

In the *Gazette* of Jan. 4th, 1814, appears the following notice:—

"Notice is hereby given, to avoid the inconvenience and delay resulting from the present desultory way of convening the *Medical Board*, that henceforward the Board will meet on the first Monday in every month at 10 o'clock in the forenoon at the Court House in this city, whereof every candidate who has obtained his reference and desires to be examined before the Board, is required to take notice and govern himself accordingly."

By Order of the Board,

Montreal, Feb. 19, 1813.

IX.

WM. WILLCOCKS SLEIGH.

In a later announcement Dr. Sleigh seems to be treading the broader road of Quackery, for in the *Gazette* of Jan. 20th, 1821, we read:—

"FREE TO THE PUBLIC ! ! !

"Dr. W. W. Sleigh proposes delivering a few lectures on those affections which proceed from diseased states of bowels and liver and satisfactorily prove that ninety-nine diseases out of a hundred have their origin in those parts ; further, will particularly notice the common mistake of calling a disease in the liver a consumption. Female parents are particularly invited, and to render the company a select one, none will be admitted without a ticket to be had at Dr. Sleigh's house on giving their names."

On July 11th, 1821 :—"In consequence of the great interest which appears to be taken by many of the cultured and enlightened and respectable citizens in the few lectures which have already been delivered in the *Anatomical theatre*, Dr. Sleigh will regularly proceed through the most interesting principles of the animal economy every Monday evening at 8 o'clock."

On August 22nd: Dr. Sleigh's "Lectures on Craniology" are advertised at great length.

X.

RE DR. ARNOLDI.

Dr. Arnoldi has several characteristic announcements in the Montreal *Gazette*:—

"Dec. 22nd, 1814: A stray cow and an ox have been for some time past at the subscriber's farm, the owner is desired to prove property, pay the expenses and take them away.

May 6th, 1816 :—A Card. D. Arnoldi requests the person who borrowed his Brass Pump and Breast glass, some time ago, to return them as soon as possible, as he has an urgent occasion for them and does not recollect to whom he has lent them."

Feb. 14th, 1818: "Dr. Arnoldi takes this method of letting his friends and the public in general know that he had taken his nephew Mr. Peter Deihl into partnership, who being very generally known here, it is presumed he may confidently promise every attention to those that may apply to him, and will enable D. A. to devote more time now to the particular friends who have so liberally supported him.

" D. A. avails himself of the occasion to request his friends to settle their accounts with him as soon as convenient.

" An apprentice of reputable connections and competent acquirements will meet with every opportunity that the country and an extensive practice can afford.

" Montreal, 1st February, 1818."

The following is Dr. Arnoldi's signature:

D Arnoldi
Decr 19. 1815

XI.

RE HENRY LOEDEL AND WILLIAM LEE.

Henry Loedel, the father of Henry P. Loedel, was a hospital mate of the First Battalion of the Royal Canadian Volunteers. The following is a petition for a promotion to a position of Hospital Mate, vacant at Kingston, in which he gives the more important points in his personal history:—

Montreal, February 26th, 1799.

May it please Your Excellency,

Your Excellency's humble Petitioner shows that in 1776, he came out to this country with the German troops in the quality of a surgeon's mate and served in that quality to the year 1784 ; being the latter time attached to the General Hospital (which he will prove if necessary) and that since the year 1784 he has practised in this city in the quality of a surgeon, has held the honour of being chosen surgeon's mate of the British Militia in the spring of 1787, and since that, a member of the Board of Surgeons, as Examiner for the District of Montreal, since which in the month of August, 1787, when the First Battalion of Royal Canadian Volunteers was without a Mate, in consequence of the resignation of a Mr. Ferrie, the then Mate, he applied to His Excellency, who was pleased to grant said place to your humble Petitioner, and has been ever since with the same regiment, and done the duty of Surgeon's Mate. From these services he thinks he has a right to a place that now offers for a vacancy of a Hospital Mate at Kingston, in Upper Canada, and begs that His Excellency will take into consideration his former services as well as his large family of a wife and eight children, and that it is absolutely impossible for him to move much about with a regiment. Under these circumstances he flatters himself that His Excellency will take his case into consideration for former services, as well as being burdened with such a large family, and recommend him to the Board of Surgeons in London, being

DR. GEORGE ROSS (Vice-Dean, 1889).

confident that no applicant can show greater pretensions to the place in question or anything similar. And His Excellency's petitioner as in duty bound shall ever pray.

HENRY LOEDEL,
Surgeon's Mate,
1st Batallion Royal Canadian Volunteers.

(Canadian Archives, Vol. C., 287.)

The following is Henry Loedel's signature:

Henry Loedel
May 15th 1815

At the close of the war in 1815, Henry Loedel, Senior, was placed with many others upon the Half-Pay list, and continued to draw his half-pay allowance of two shillings per diem for fourteen years, when an order was issued from the Home Government ordering not only that the half-pay allowance of "Hospital Mates William Lee and Henry Loedel" be stopped, but that they be requested to refund all the money paid to them since they were placed upon the Half-Pay List. No reasons are given, but the Commissioner General is told to explain to them the apparent irregularity of the order. Petitions remonstrating and setting forth the hard conditions of their case were sent in by both men, and the order was finally withdrawn. The following are the documents telling the story:—

(C. Archives, Series C., Vol. 298, p. 126.)

Adjutant General's Office,
Quebec, 19th September, 1815.

General Order No. 3: Hospital Mates Christopher Carter. William Lee, Henry Loedel, George Stubinger and John Buchanan, having been struck off the Establishment of the Medical Department, but having been recommended to the Commander-in-Chief for Pensions suitable to their services, are to continue to draw their Garrison allowances until His Royal Highness' pleasure is known.

In absence of the Deputy-Adjutant General,

Signed: G. F. BURKE,
Major of Brigade.

C. Foster,
Lt.-Col. Asst. Adjt. General.

(C. Archives, Series C., Vol. 298, p. 104.)

Commissariat, Canada,
Quebec, September 29th, 1829.

Sir :

I have the honour to transmit to you extract from a Treasury Letter, No. 268, dated 6th of August, ultimo, relative to the allowances issued to Hospital Mates Lee and Loedel, and I request you will communicate this enclosure to the latter gentleman and call upon him to repay the value of the allowances he has received into the Military chest in conformity to the directions of the Lords Commissioners of His Majesty's Treasury, and you will be careful to suspend all further issue of allowances to Mr. Loedel.

Signed, R. J. ROUTH,
Com. Genl.

Depty. Com. Genl. Forbes,
Montreal.

(C. Archives, Series C., Vol. 2[illegible], p. 106.)

Extract from a Letter, No. 268, dated Treasury Chambers, the 6th of August, 1829, to Com. Genl. Routh :—

"I am commanded to desire you will call upon Hospital Mates Lee and Loedel to pay into the Military Chest the value of the allowances issued to them subsequently to the notification to them of their being placed upon Half-Pay, and that you will explain the apparent irregularity of the circumstances attending such issues."

(C. Archives, Series C., Vol. 298, p. 103.)

Deputy Com. Genl. Office,
Montreal, 3rd October, 1829.

Sir :

I have the honour to transmit copies of documents which have been addressed to me from Head Quarters directing me to call upon you to refund the value of all allowances issued to you in this Garrison since the period at which you were placed upon Half-Pay was notified to you, and to which I have to request your attention.

I am also directed to state to you that the issue of all further allowances is stopped.

I have the honour to be, Sir,

Your obedient servant,
C. J. FORBES,
D.S.G.

Henry Loedel, Esq.,
Hospital Mate, h. p.
Montreal.

(C. Archives, Series C., Vol. 298, p. 124.)

Commissariat Office,
York, 12th October, 1829.

Sir :

I have the honour to transmit to you extract of a letter from the Lords Commissions of His Majesty's Treasury, which I have received from the Commissary General with directions to request you will be pleased to call at this office and pay into the Military Chest the value of the allowances you have drawn subsequently to the notification of your being placed upon Half-Pay.

I have the honor to be, Sir,

Your very obedient servant,
John Rendall,
Act. Comm. General.

To Hospital Mate Lee,
York.

(C. Archives, Vol. 298, Series C., p. 100).

To His Excellency Sir James Kempt, Knight, G.C. of the M.H.M.O. of the Bath, Captain, General and Commander-in-Chief, &c., &c., &c.

The Petition of Henry Loedel, Hospital Mate, on Half-Pay:—

Respectfully Showeth,

That Your Petitioner has had the honour of bearing His Majesty's Commission for a term upwards 53 years, 28 of which have been spent in actual service in the respective capacities of Surgeon's Mate and Hospital Mate, and has now attained the advanced age of 75 years, suffering under the infirmities incident to that period of life.

That at the close of the late war with the United States of America in the year 1815, your Petitioner in common with many other Hospital Mates were struck off the Establishment and were at the same time recommended to the Commander of the Forces for pension suitable to their respective services, and till the pleasure of the Commander-inChief should be known by an order dated from the Adjt. General's Office, Quebec the 19th of Sept., 1815, and signed F. Burke, Major of Brigade, your Petitioner and the other Hospital Mates were permitted to continue to draw their Garrison allowances until His Royal Highness' pleasure should be made known. That subsequently your Petitioner was placed on the Half-Pay list of 2/ per diem and continued to receive his Garrison allowances, there being no order or regulation to the contrary.

Your Petitioner did in fact and in truth, considering his long services, and the small sum allowed him at pension or half-pay, believe that from the day on which his pension commenced it had graciously pleased His Majesty's Government to continue the allowances for the purpose of rendering his declining years more comfortable, and your Petitioner never did believe whilst enjoying the said allowances he was receiving that which he was not entitled to.

That your Petitioner has received intimation causing him the greatest grief and astonishment, namely that instructions have been received from home ordering him to refund the allowances drawn since he was placed on the Half-Pay List.

Your Petitioner respectfully represents that if blame can attach to anyone, your Petitioner humbly conceives that he is exonerated, and that had it been the intention of His Majesty's Government to discontinue the allowances, ample time has been allowed its officers to have done so, and to have notified him thereof.

That it is a very hard and distressing case that at this moment, after having been permitted by Government and its officers openly and in good faith to draw garrison allowances for a space of fourteen years that he should be now called upon to refund the same.

That your Petitioner is now not in a situation to pay any sum of money, much less one of such magnitude, that his pension merely gives him the means of existence and if that were stopped your Petitioner would be reduced to a state of beggary.

Your Petitioner therefore humbly solicits your attention to the subject of this petition and prays you will be graciously pleased to cause his case to be so represented to His Majesty's Government that it may be taken into consideration and that justice and mercy may be granted him in the premises.

And your Petitioner as in duty bound will ever pray,

Henry Loedel,,

Hospital Mate, h.p.

Montreal, 9th October, 1829.

(C. Archives, Series C., Vol. 298, p. 107).

Montreal, 17th October, 1829.

Sir :

Since I had the honor of presenting to His Excellency the Commander of the Forces, a Petition in my behalf when in Montreal, I have discovered several letters and documents relating to the subject and which place my peculiar situation in a much more favorable point of view. I have also been informed that there are in the Public Offices at Quebec several orders and documents of material importance to me. I have therefore to request that you will delay forwarding that Petition till I shall have it in my power to frame a new memorial which I shall immediately forward for His Excellency's gracious consideration.

I have the honor to be, Sir,

Your obedient humble servant,

Henry Loedel,

Hospital Mate.

To Lieut.-Col. Cooper, Military Secretary, Quebec.

(C. Archives, Series C., Vol. 298, p. 174).

DR. THOMAS G. RODDICK (Dean, 1901).

To His Excellency Sir James Kempt, Knight, Grand Cross of the most Honorable Military Order of the Bath, &c., &c., &c.

The Petition of Henry Loedel, Hospital Mate, on Half-Pay :—

Respectfully showeth,

That your Petitioner has had the honor of bearing His Majesty's Commission for upwards of fifty-seven years; twenty-eight years of which have been spent in actual service in the respective capacities of Surgeon's Mate and Hospital Mate, and has now attained the advanced age of seventy-five years, suffering under the infirmities incident to that period of life.

Your Petitioner under any other circumstances would be very much averse to an enumeration of particular services, but in the present case he feels he would be doing an injustice to himself if he refrained from stating such facts as may tend to place his services in a proper point of view.

In the year one thousand seven hundred and ninety-seven, when the 41st regiment of foot came to this country and were quartered in Montreal, the regiment was afflicted with a malignant typhus fever, their assistant surgeon had died at Three Rivers on his way up, the Surgeon, Mr. Park, was too ill for service and it fell, consequently, to the lot of Mr. Gould, the only garrison medical officer in Montreal to attend the sick of the regiment. It was his fate to contract the infection, and in a few days he died.

At this period your Petitioner was Assistant Surgeon in the Royal Canadian Volunteers, and, seeing the dangerous situation of the regiment and the continued increase of the infection which had spread from the men to the inhabitants, he volunteered his services, and, being accepted, devoted his time with assiduity and success till it pleased the Almighty to afflict him with the same fever, under which he lingered a long time, but happily recovered.

Your Petitioner then on full pay only considered he was doing his duty to his country in thus volunteering and never thought of any remuneration for it.

That at the close of the late war with the United States of America, in the year one thousand eight hundred and fifteen, your Petitioner, in common with many other hospital mates, was struck off the Establishment and were recommended to the Commander of the Forces for pension proportionate to their respective services, and till the pleasure of the Commander-in-Chief should be known, by an order dated from the Adjt.-General's Office, Quebec, the nineteenth day of September, one thousand eight hundred and fifteen, and signed "F. Burke," Major of Brigade. Your Petitioner and the other Hospital Mates were permitted "*to continue to draw their garrison allowance until His Royal Highness' pleasure should be made known.*"

That subsequently your Petitioner was placed on the Half-Pay List of 2 shillings per diem, and continued to receive his garrison allowances, there being no order or regulation to the contrary.

Mr. Wright, then Inspector of Hospitals, considering that the length and merits of your Petitioner's services deserved something beyond the usual allowance of half-pay; two recommendations were sent home, strongly backed by Sir John C. Sherbrooke, then Governor-General, "*to have your Petitioner placed upon increased half pay.*"

That on the twenty-fourth of April, one thousand eight hundred and seventeen, Mr. Wright informed your Petitioner that both applications had been successful, and that "*he had no chance of any increase being obtained to the very inadequate pittance of two shillings per diem, but that through the kind indulgence of His Excellency his allowance should be continued to him for the small deduction of two pence halfpenny per diem.*"

On the same subject in May, one thousand eight hundred and seventeen, Mr. Wright states in a letter to your Petitioner, "*Your barrack allowances will in no way interfere with your half pay for which your affidavits, &c.*"

Your Petitioner therefore, from that day to this, continued to draw his allowances and did verily believe that he was strictly entitled so to do, as well from the foregoing communications from the then Governor-General and from his superior officer, Mr. Wright, as from the firm conviction that His Majesty's Government had consented to it to make amends for the small amount of his half pay.

That your Petitioner has now received intimation causing him the greatest grief and astonishment, namely, that instructions have been received from the Home Government ordering him to refund the allowances drawn since he was placed on the Half-Pay List.

Under all the above circumstances your Petitioner throws himself on the justice and clemency of His Majesty's Government. If he has erred and received that to which he was not entitled, can any blame be attached to him ? In good faith, under sanction of a general order and with the approbation of his Superior Officer he has continued to draw his garrison allowances &c., and all the respective officers as well in this country and at home have permitted him to do so for upwards of fourteen years without any censure, although the allowances must have been audited and sanctioned from year to year.

Your Petitioner therefore respectfully represents that if blame can attach to anyone your Petitioner humbly conceives that he is exonerated and that had it been the intention of His Majesty's Government to discontinue the allowance, ample time has been allowed its officers to have done so, and to have notified him thereof.

That it is a very hard and distressing case that at this moment after having been permitted by Government and its officers, openly and in good faith to draw garrison allowances for a space of fourteen years, that he should now be called upon to refund the same.

That your Petitioner is not now in a position to pay any sum of money, much less one of such magnitude, that his pension merely affords him the means of existence, and that if that were stopped your Petitioner would be reduced to a state of beggary.

Your Petitioner therefore humbly solicits your attention to the subject of his petition and prays you will be graciously pleased to cause his case to be so represented to His Majesty's Government that it may be taken into consideration and that justice and mercy may be granted him in the premises.

And your Petitioner as in duty bound will ever pray,

Henry Loedel,

Montreal, 16th November, 1829. Hospital Mate, h.p.

(C. Archives, Series C., Vol. 298, p. 123).

York, Upper Canada,
22 October, 1829.

Sir :

I have the honor to transmit to Your Excellency herewith copies of communications from Assistant Commissary Rendall to me relative to certain allowances which I have received yearly since the year 1815, under the authority of a general order of Lieutenant-General Sir John Cope Sherbrooke, at that time Commander of the Forces in British North America.

In my answer to Mr. Rendall's letter, a copy of which I transmit for Your Excellency's information, I have stated in detail the peculiar circumstances of my case, and I pray of Your Excellency to be pleased to take the same into your favorable consideration and to recommend me to His Majesty's Government for relief in such way as to Your Excellency may appear most proper.

I have the honor to be,

Your Excellency's most obedient servant,

William Lee,
Hospital Mate, h.p.

To His Excellency, Sir John Colborne, K.C.B., &c.

(C. Archives, Series C., Vol. 298, p. 122.)

Government House,
York, 29th October, 1829.

Sir :

I have the honor to forward to Your Excellency the enclosed statement and accompanying papers from Mr. Lee, formerly attached to the Indian Department ; from which it appears I think that his case is deserving of a favorable consideration.

I have the honor to be, Sir,

Your Excellency's most obedient and humble servant,

J. Colborne.

His Excellency, Lieut.-General, Sir James Kempt, G.C.B., &c.

(C. Archives, Series C., Vol. 298, p. 127.)

York, 22nd October, 1829.

Sir :

I have to acknowledge your letter of the 12th instant, enclosing an extract from a letter from the Lords Commissioners of His Majesty Treasury and calling upon me by command of Their Lordships to pay into the Military Chest the value of all the allowances issued to me subsequently to the notification of my being placed upon half-pay, and I beg leave to state for the information of the Lords Commissioners of His Majesty's Treasury that the allowances were given to me in virtue of the enclosed general order of His Excellency, Sir John Cope Sherbrooke, Commander of the Forces in British North America in 1815, and as far as relates to me I have reason to believe that His Excellency was influenced by the peculiar hardship of my case, having at the same time strongly recommended me for an increase of half-pay.

My situation in the Medical Department of the army is so singular and the allowances made to me so inadequate for the long and faithful services which I have performed that I hope I shall not be deemed wanting in respect in taking this opportunity of bringing them under Their Lordships notice, and I am the more encouraged in doing so as I have never yet failed to interest every military officer commanding in the Provinces warmly in my favor, who became acquainted with my services and the manner in which they have been remunerated.

I entered His Majesty's service at Wexford in Ireland on the 6th day of May, 1786, at the solicitation of Major Grant, then commanding the 49th Regiment, and remained with the corps eleven months, the surgeon and mate being left in bad health at Duncannon Fort.

I was soon after examined by the Medical Board at Dublin by order of the Secretary of War, and attached to the 24th Regiment as Surgeon's Mate, purchasing off Mr. Inglis for one hundred and twenty guineas, and continued with the regiment till the fourth of April, 1800. During this period I was stationed with detachments of the regiment in several parts of Ireland, Quebec, Montreal and Michilimakinac. While I was at Michilimakinac in 1796, it was given up to the Americans and the garrison moved to St. Josephs where all were forced to hut without any comforts, by which the duties of the Medical Officer were very much increased.

Discerning while stationed at Halifax in 1799, that I had never been gazetted or received my commission as Assistant Surgeon, His Royal Highness, the Duke of Kent, was pleased in consideration of my long services to direct me to be again examined by a Medical Board assembled for the purpose, to enable me to procure my commission, which His Royal Highness promised immediately to obtain.

In 1800, His Royal Highness recommended me for an Hospital Mate, which was then considered promotion and given me as a reward for services, and my appointment came out signed by Inspector-General Knight.

I was immediately sent to Canada to the most distant post, St. Joseph, where there was still no quarter of any description, which brought on me the severe calamity of losing my wife from cold, having no shelter from the weather and leaving three infant children, the youngest fourteen days old, all of whom I have subsisted ever since on my pay as an Hospital Mate.

After a residence of three years I was sent to Amherstburg, where I likewise continued three years, two of which I had no military quarter allowed me and was forced to hire lodgings at my own expence.

In 1807, I was removed to York where I still remain.

On the 27th of April, 1813, when York was taken by the enemy, I was ordered by Major-General Sheaffe to retreat with the army to Kingston and dress such of the wounded as could travel, I was forced to walk the whole way through the worst possible roads, stopping and dressing daily all who were able to retreat. On my arrival at Kingston and giving up the wounded I was ordered instantly back to York to attend those that had been left behind, and not having the means of procuring a horse I had to retrace the same on foot, being 180 miles.

I lost on the occasion everything that I possessed as I resided in the hospital at the garrison for which a small remuneration was allowed me. I had sixty-seven sick and wounded to attend to at York on my return, assisted by Temporary Hospital Mate Summer. Perceiving a great waste in Public

Stores in June 1813, I volunteered my services as Apothecary and Purveyor, such a person becoming necessary as a general hospital was then establishing at York, but not omitting to perform my whole duty as Hospital Mate.

I was left in care of the Hospital at York on the 31st July, 1814, when the enemy again took possession of the post, and was able by my exertions to preserve the whole of the Government Medical Stores to a large amount, though the enemy were frequently in the hospital during the two days that they were in possession. Being Apothecary and Purveyor, for the performance of such duties no allowance has ever been made me, but I was forced to live in a small storeroom in the hospital where I was exposed to calls night and day, I continued to act in this double capacity during the remainder of the war, the hospital frequently containing from five to six hundred patients, a great portion of whom were confided to my care as an Hospital Mate.

I hope when the length of my services being more than twenty-nine years, is considered, and my situation with three helpless children to support, that I purchased my commission in the first instance, and that which was intended as a benefit for me by His Royal Highness, the late Duke of Kent, has turned out a deplorable disadvantage from new regulations being adopted in the Medical Department which allowed me but two shillings per day, half-pay, and the arduous duties which I have performed during the war,—I trust that the Lords Commissioners of His Majesty's Treasury will take my case into their favorable consideration and order me such relief in lieu of the allowances ordered to be withheld and may enable me now an infirm old man, to pass the remainder of my life in some degree of comfort.

With respect to refunding the amount of the allowances drawn by me since the notification of my being placed upon half-pay, I beg leave to state that it is utterly impossible for me to do so. And should the Lords Commissioners of His Majesty's Treasury order my half-pay to be stopped until the amount of these allowances should be refunded, it will be depriving me and the children, who still depend upon me for support, of the small pittance hitherto received by me as half-pay for services rendered to His Majesty for the long period of nearly thirty years, the whole of which time, with the exception of two years, has been on foreign service.

When Their Lordships shall have my case made fully known to them I have every confidence in the benevolence which I am sure will guide them in coming to a final decision upon it, and that they will rather confirm the general order of His Excellency, Sir John Cope Sherbrooke, than take from me what the order conferred. Much less can I fear that Their Lordships will under any view of my case permit their order to Commissary-General Routh of the 6th of August last, to be carried into full effect.

I have the honor to be,

&c. &c. &c.

Wm. Lee,

Hospital Mate, h.p.

To John Rendall, Esquire

&c. &c. &c.

XII.

EXTRACTS FROM NELSON'S ALMANACS 1797–1830.

Neilson's Almanac published in Quebec and printed by John Neilson, 3 Mountain Street, 1797.

1797. Physicians, Surgeons, etc., District of Montreal.

Surgeons to examine those asking for licenses: Chas. Blake, Geo. Selby, R. Jones, Xavier Bender, Henry Loedel, John Rowand.

Surgeons, Apothecaries and Obstetricians: John Rowand, Jean Claud Lehouller.

Surgeons and Apothecaries: Jean Descondue, Robert Jones, Hern. Melchoir Eberts, Geo. Stubenger, John Ferries, Geo. Meyers, Louis Barbier, Marie Antoine Vigneau, Geo. Henkel.

Surgeons: Francois Rientord, Daniel Arnoldi, Henry Munro, J. Herigault, J. Bte. Rientord, Alex. Talham, Aug. Beng. Schulte.

1806. Physicians and Surgeons for District of Quebec.

Surgeons appointed to examine those asking for licenses: James Fisher, G. Longmore, Wm. Holmes.

District of Montreal.

Surgeons to examine those asking for licenses: Blake, Selby, Jones, Richard Symes, Henry Loedel, John Rowand, Bender.

Surgeons, Apothecaries and Obstetricians: John Rowand, Jean Claud Lehoulier.

Surgeons and Apothecaries: Jones, Hern. Melchoir Eberts, Stubenger, Loedel, Meyers, Marie Antoine Vigneau, August Globenskynd, Moses Nicolls, Simon Fraser, Augustin Leonard, Timothy Johnson, Abner Rice, Jos. Lesage, Robt. Sheldon, John McLaughlin, John H. Ferris, Henry Porter, John Carter.

Surgeons: Francois Rientord, Daniel Arnoldi, Henry Munro, J. Rientord, Alex. Talham, Aug. Ben. Schiller, Chas. Gusmgher.

Apothecaries: John Kinlard, Wm. Barr, Caseneuve, Jonas Abbott, Geo. Wadsworth.

Among members of Provincial Parliament, Montreal West Ward James McGill and Louis Chaboillez.

Among the King's Honorable Executive Council, the Hon. James McGill, the Hon. John Richardson.

Among Commissioners to execute repair of churches, District of Montreal, James McGill.

Among Commissioners for execution of Act 40th, George III., for the relief of insane persons and for the support of foundlings, James McGill.

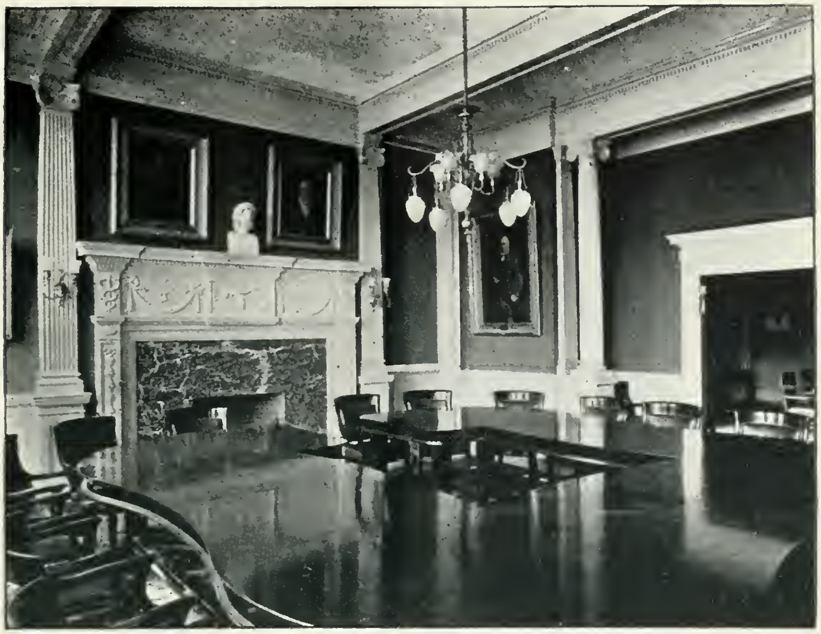
Trustees for improving, widening and keeping in repair the road from the City of Montreal to Lachine through the wood, Hon. J. C. L. de Longueil, James McGill, John Lees, John Richardson, Jos. Papineau, Isaac McClark, Jos. Frobisher, Louis Guy, Jean Marie Mondelet.

Commissioners for removal of old walls surrounding city of Montreal, James McGill, Joseph de Longueuil, John Richardson, Louis Chaboillez.

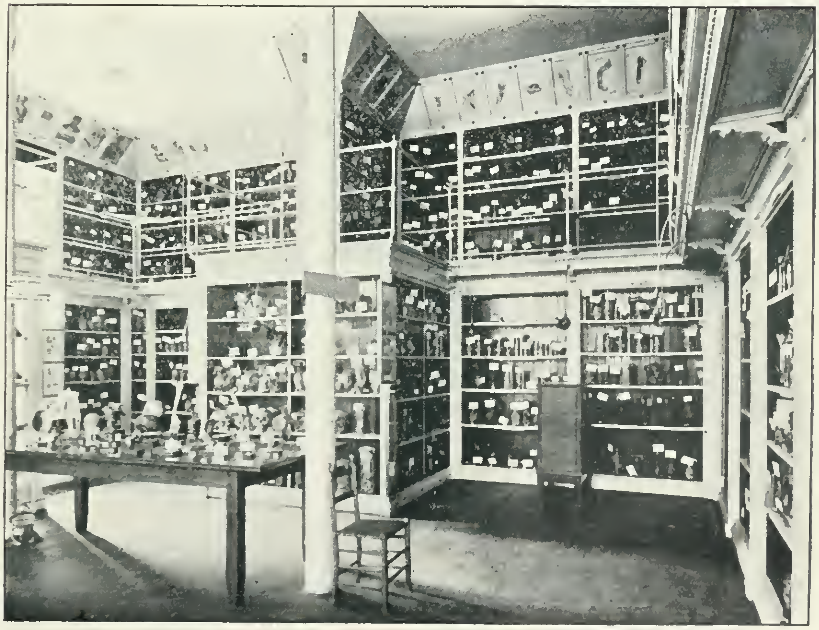
1808. Hospital Mates Lee and Loedel mentioned.

John McGill, Captain in Canadian Fencible Infantry.

Physicians and Surgeons for District of Quebec, Samuel Holmes mentioned as licensed surgeon and apothecary; Wm. Holmes, surgeon appointed to examine for licenses.



Faculty Room 1901.



A Corner in the Pathological Museum.

Nothing new in Physicians and Surgeons for Montreal to examine license candidates.

1811. Among Commissioners appointed to administer oaths for applicants to Crown Lands, James McGill.

Surgeons and Physicians for District of Montreal.

Surgeons appointed to examine those who ask for licenses: Geo. Selby, Henry Loedel, John Rowand, F. X. Bender, G. Powell, Benj. Green, Daniel Arnoldi, Henry Munro, Peter Diehl, Abner Rice, John Rowand, Jean Bte. Herigault of Montreal; Jean Claud Lehoulier, Assomption; Geo. Stubenger, Fort Chambly; Geo. Meyers, Pointe Claire; Aug. Globenskynd, Riviere du Chene; J. Brown Chamberlain, Dunham; Simon Fraser, Terrebonne; Augustin Leonard, St. John; Robt. Sheldon, Prairie de la Magdalène; John H. Ferris, Rivière du Loup; Henry Porter, Les Cèdres; John Carter, Three Rivers.

Surgeons: J. Bte. and Francois Rientord, Three Rivers; Iserhoff, Berthier; Talham, Rivière Chambly; Schiller, Belœil.

Apothecary: G. Lyman and Geo. Wadsworth, Montreal; Caseneuve, Assomption; Jonas Abbot, Dunham.

Among others under "Residence unknown" is the name of Henry Loedel.

Among Lower Canada Militia, District of Montreal, 1st Div., Lieut.-Col.-Major James McGill.

1812. Physicians and Surgeons, District of Quebec.

Surgeons appointed to examine for licenses: Wm. Somerville, James Fisher, M.D., James Macaulay.

District of Montreal, to examine for licenses: Geo. Selby, Henry Loedel, Rowand, Bender, Herigault, Benj. Green, D. Arnoldi, Henry Munro, Grant Powell, D. J. Kennelly, Wm. D. Selby, M.D., Abner Rice.

Apothecaries: In town, S. Lyman, Geo. Wadsworth, Moses Nichol.

1813. Physicians and Surgeons, District of Quebec.

To examine for licenses: J. Fisher, M.D., and Jas. Macaulay.

District of Montreal: Selby, Loedel, John Rowand, Bender, Arnoldi, Green, Grant Powell, D. J. Kennelly, Abner Rice, Réné Kimbert, in town. Henry Loedel in the country.

Among Justices of the Peace appointed 19th June to administer oaths to half-pay officers, Hon. John Richardson.

1814. Surgeons appointed to examine licenses, District of Quebec: Wm. Holmes' name again as surgeon among five.

District of Montreal: Same as 1813. Henry Loedel in the country.

1816. Dr. Arnoldi's name to examiners for licenses. Henry Loedel in the country.

1817. Physicians and Surgeons, District of Quebec, license examiners: Jas. Fisher, M.D., Wm. Holmes, Thos. Lloyd, Wm. Hackett, M.D., William Stewart, *Thos. Fargues, M.D.*

District of Montreal: Daniel Arnoldi, Benj. Green, Grant Powell, *Wm. Robertson*, Henry Loedel's name continued, but not mentioned among country practitioners.

1818. Fargues' name continued as examiner for candidates for licenses in Quebec District, as also Wm. Holmes. In Montreal, Henry Loedel, D. Arnoldi and Wm. Robertson, on a line by themselves; *Wm. Caldwell* in the country, District of Montreal, so also Wm. Fraser, Wolfred Nelson.

1819. Fargues and Holmes' names continue, District of Quebec; same examiners for Montreal; Henry Loedel's name not mentioned in the country, but Wm. Caldwell as practitioner in the country.

1820. Holmes and Fargues' continue; same examiners in Montreal; Wm. Caldwell mentioned in town.

1821. Fargues' name in District of Quebec as examiner with Wm. Holmes, M.D., Wm. Stewart and two others: District of Montreal, Loedel, Arnoldi and Robertson as examiners. Wm. Caldwell in town.

Vaccine Board:

Thos. Fargues, M.D., President,
Wm. Hackett, M.D., Vice-President,
Wm. Holmes and Jos. Morrin, Members.

1822. Same examiners in Quebec and Montreal. Among practitioners in the country, Peter C. Loedel.

1823. Physicians and Surgeons same as in 1822; Vaccine Board do.

First announcement of Montreal General Hospital: Established by subscription in 1820, subscribers of 25 and upwards are Directors for life; Chartered by Royal Warrant 1822:

Hon. John Richardson, President,
Rev. J. Bethune, Vice-President,
S. Gerrard, Esq., Treasurer,
J. Stephenson, M.D., Secretary,
John Try, Esq., Purveyor.

Committee of Management: Alexander Skakel, Chairman; Henry McKenzie, Thomas McCord, Henry Corse, Abner Baggs.

Medical Board: William Robertson, M.C., Chairman; William Caldwell, M.D., H. Loedel, M.C., John Stephenson, M.D., A. F. Holmes, M.D., Margaret Stevenson, Matron; Joshua Henneman, Doorkeeper.

1824. Physicians and Surgeons, District of Montreal, in the city.

Examiners of candidates for licenses: William Robertson, William Caldwell, John Stephenson, A. F. Holmes, Henry P. Loedel.

1825. Examiners for District of Montreal same as 1824.

Loedel's name is spelt Leodel as also was Henry Loedel's name.

McGill College at Montreal. Founded and endowed by the will of the late Mr. McGill of that city. Established by Royal Charter 31st March, 1821.

Governors: The Governor-in-Chief, the Lieut.-Governors of Lower and Upper Canada, the Lord Bishop of Quebec, the Chief Justices of Upper Canada and Montreal.

Professors, etc. Appointed 1823: Principal and Professor of Divinity, the Rev. G. J. Mountain, D.D. (of the University of Cambridge); Professor of Moral Philosophy and Learned Languages, the Rev. J. L. Mills, D.D. (Univ. of Oxford); Professor of History and Civil Law, the Rev. J. Strachan, D.D. (Univ. of Aberdeen); Professor of

Mathematics and Natural Philosophy, Rev. J. Wilson, A.M. (Univ. of Oxford); Professor of Medicine, Thos. Fargues, M.D. (Univ. of Edinburgh).

N.B. In consequence of the bequest having been contested this establishment is not yet in operation.

1826. Thos. Fargues continues examiner for District of Quebec. District of Montreal examiners, same.

McGill College, Thos Fargues still professor of medicine.

1827. Physicians and Surgeons, no change.

1828. Hotel Dieu de Quebec : Thos. Fargues, M.D., Médécin Général; William Holmes, M.D., Chirurgien Général.

Montreal General Hospital, Henry P. Loedel's name off Medical Board and Peter Diehl's name on. Stevenson's name thus spelt.

NATURAL HISTORY SOCIETY OF MONTREAL.

Earl of Dalhousie, Patron ; Stephen Sewell, Esq., President ; Col. Hill, Lt.-Col. McKay, Wm. Caldwell, M.D., Vice-presidents ; John S. McCord, Recording Sec'y ; Henry Corse, Treasurer ; A. F. Holmes, M.D., Corresponding Sec'y.; H. H. Cunningham, Librarian and Cabinet Keeper.

Henry P. Loedel still on examiners for licenses, five names remaining the same. Peter Diehl is on list of doctors in town.

1829. Loedel's name still on list, other names the same.

Montreal General Hospital : Medical Board, now only—Wm. Robertson, Wm. Caldwell, A. F. Holmes, John Stevenson.

McGill College, same announcement.

MONTREAL MEDICAL INSTITUTION.

A. F. Holmes, M.D.—Chemistry and Materia Medica.

Wm. Caldwell, M.D.—Practise of Physic.

J. Stephenson, M.D.—Anatomy, Physiology and Surgery.

Wm. Robertson—Midwifery.

Medical Library—A. F. Holmes, Secretary.

1830. McGill College announcement the same.

Montreal Medical Institute—same announcement, words added "Associated with the above College."

Montreal General Hospital—visit every day at noon. Students who shall hereafter conform themselves to the bye-laws and statutes of this university may take out degrees in medicine and surgery.

1831. McGill College, Medical Institution, Montreal General Hospital same names.

1832. District of Quebec, Thos. Fargues' name still on list of examiners for licenses.

District of Montreal, Board of Examiners:—A. Arnoldi, president ; W. Nelson, Vice-President; R. Nelson, F. C. Duvert, J. B. Mullein, Alex. Demers, W. J. Vallée, P. Beaubien, Z. Kimber, R. S. Boindage, J. Bte. Lebourdin.

Announcements of McGill College, Medical Institution and Medical Board Montreal General Hospital the same.

1833. Montreal General Hospital, Wm. Vallée, M.D. and G. R. Peyton, Apothecary added to Medical Board.

1834. Under Physicians and Surgeons is entered:—

Members of the Montreal Medical Board:—A. Arnoldi, Montreal President; W. Nelson, Vice-President, with a long list of others.

Hotel Dieu de Quebec:—Thos. Fargues and Wm. Holmes, Consulting Physicians and Surgeons.

Montreal General Hospital:—Wm. Caldwell's name gone. J. Racey, M.D. and A. F. Brunneau added to Medical Board.

Montreal Medical Institution:—Dr. Caldwell's name still on.

1835. Thos. Fargues' name disappears from list of examiners, but is on list of Hotel Dieu and list of Licensed and Surgeons, Que.

Dr. Caldwell's name still on Medical Institution; W. Fraser added to Montreal General Hospital Board, and Peyton's gone.

1836. Archibald Hall, M.D., added to Medical Board Montreal General Hospital.

McGill and Montreal Medical Institution announcement the same.

1840. Montreal General Hospital:—Samuel Gerard, President; John Molson, Vice-President; Benjamin Holmes, Treasurer; A. Skakel, Secretary.

Committee of Management:—W. Lunn, Chairman; J. A. Perkins, J. Redpath, J. Mathewson, F. A. LaRoque.

Medical Board:—Wm. Robertson, M.D., A. F. Holmes, M.D., A. Holland, J. Stephenson, M.D., G. W. Campbell, M.D., F. Bruneau, M.D., J. Crawford, M.D., S. Sewell, M.D.

J. Dick, Apothecary; Mrs. Ball, Matron; A. Bendal, Steward.

Natural History Society:—A. F. Holmes, M.D., President.

Thos. Fargues still on Quebec Medical Board.

Members of Montreal Medical Board :—Wm. Robertson, President ; A. F. Holmes, John Stephenson, J. Bte. C. Trestler, P. C. Loedel, T. Bruneau, Guillaume Belin, Daniel Arnoldi, T. Quesnel, Francis C. T. Arnoldi, jun., Archibald Hall, Stephen C. Sewell, James Crawford, G. W. Campbell, Secretary.

XIII.

THE ROYAL INSTITUTION FOR THE ADVANCEMENT OF LEARNING.

(C. Archives, Laws of Canada, Vol. III.)

Provincial Act 41, George III. Cap. xvii.

An Act for the Establishment of Free Schools and the Advancement of Learning in this Province.

8th April, 1801 : Presented for His Majesty's Assent and Reserved "for the signification of His Majesty's pleasure thereon."

7th April, 1802 : The Royal Assent signified by Proclamation of His Excellency the Lieutenant-Governor :

MOST GRACIOUS SOVEREIGN :

PREAMBLE :

Whereas, Your Majesty from your Paternal regard for the welfare and prosperity of your Subjects of this Province, hath been most graciously pleased to give directions for establishing of a competent number of Free Schools for the instruction of their children, in the first rudiments of useful learning, and also occasion may require, for foundations of a more enlarged and comprehensive nature. And whereas Your Majesty hath been further most graciously pleased to signify Your Royal Intentions, that a suitable proportion of the lands of the Crown be set apart, and the revenue thereof appropriated to such purposes. Therefore, we, Your Majesty's faithful and loyal subjects, the Legislative Council and Assembly of your Province of Lower Canada, with the most lively gratitude for this new instance of Your Majesty's paternal attention to the wants of Your Majesty's subjects, and desirous to contribute everything in our power for the execution of a plan so particularly beneficial to the rising generation, do most humbly beseech Your Majesty, that it may be enacted and be it enacted by the King's Most Excellent Majesty, by and with advice and consent of the Legislative Council and Assembly of the Province of Lower Canada, constituted and assembled by virtue and under the authority of an Act, passed in the Parliament of Great Britain, entitled "An Act to repeal certain parts of an act passed in the fourteenth year of His Majesty's reign entitled "An Act for making more effectual provision for the government of the Province of Quebec in North America. And to make further provision for the government of the said Province," and it is hereby enacted by the authority aforesaid, that it shall and may be lawful to and for His Excellency the Governor, Lieutenant-Governor, or person administering the Government of this Province, for the time being, by an Instrument under the great Seal of this Province, to constitute and appoint such and so many persons as he shall see fit to be Trustees of the Schools of Royal Foundation in this Province and of all other Institutions of Royal Foundation, to be hereafter established for the Advancement of Learning therein, as also for the management and administration, improvement and amelioration of all Estates and Property, moveable or immoveable, which shall in any manner or way whatsoever, be hereafter appropriated to the said schools and institutions, for the purposes of education and the advancement of learning within this Province, to remove from time to time the said Trustees or any or either of them, and to appoint others to be the successors of such as shall be so removed, or shall die or resign their Trust.

II. And be it further enacted by the authority aforesaid, that the said Trustees and their successors, to be named in herein before directed and appointed, shall be and they are hereby declared to be, a body Corporate and Politic, in name and in deed, by the name of "The Royal Institution for the Advancement of Learning" and that by the same name, they shall have perpetual succession and a common Seal with power to change, altar, break and make new the same, when and as often as they shall judge the same to be expedient, and that they and their successors by the same name may sue and be sued, implead and be impleaded, answer and be answered unto, in all or any Court of Record or Places of Judication within this Province. And that they and their successors by the name aforesaid shall be able and capable in Law, to purchase, take, have, hold, receive, enjoy, possess and retain, without licence in mortmain or letters d'amortissement, all Messuages, Lands Tenements and immoveable property, money, goods, chattels and moveable property, which hereafter shall be paid, given, granted, purchased, appropriated, devised or bequeathed in any manner or way whatsoever, for and in favour of the said Schools and Institutions of Royal Foundation to and for the purposes of Education and the Advancement of Learning within this Province, and do, perform and execute all and every lawful act and thing in as full and ample a manner and form, to all intents, constructions and purposes, as may any other Body Politic or Corporate, by Law, may or ought to do.

XIV.

McGILL UNIVERSITY PRIOR TO 1859.

The terms of the will of the Hon. James McGill are stated in one of a series of artitcles on "The Colleges of Canada," published in the Journal of Education. The article is abstracted in the Montreal Medical Chronicle of Education for July, 1859 and contains interesting information about the early history of the college:—

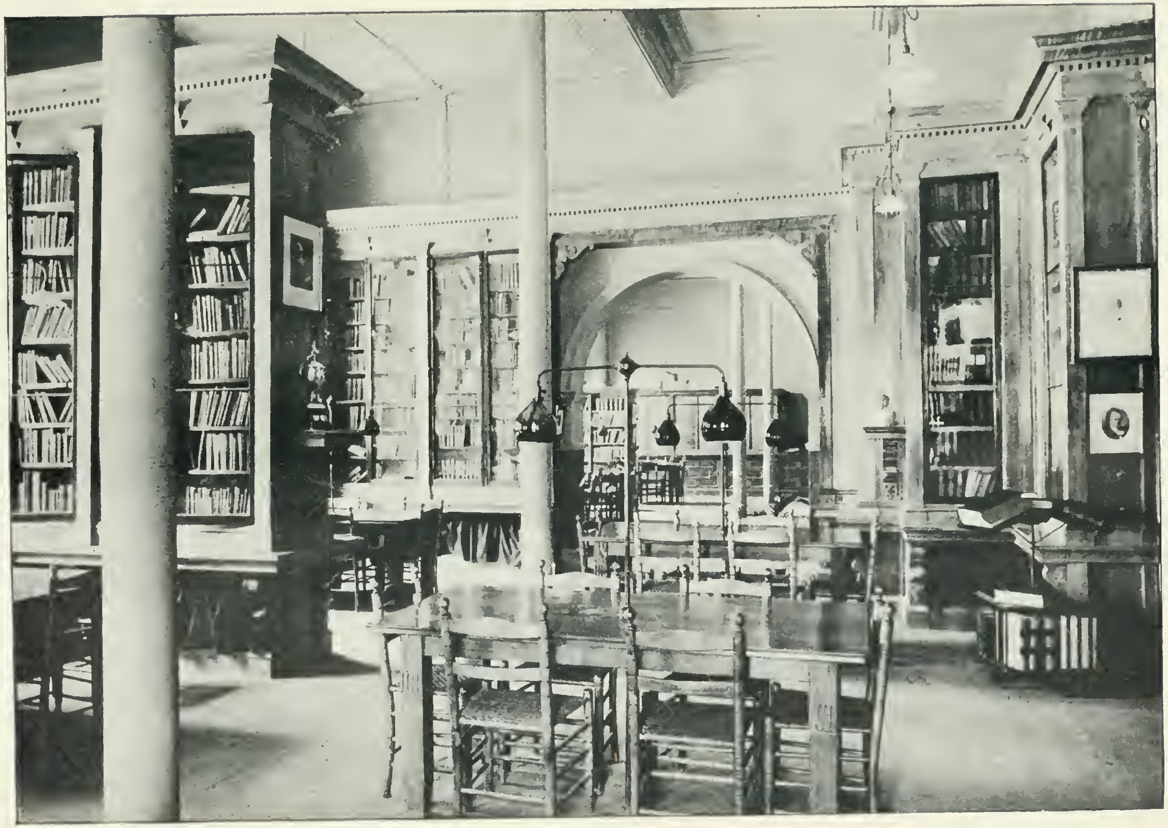
"By his last will Mr. McGill "gave to the Hon. John Richardson and other trustees" his farm and land called Burnside, situated near the City of Montreal, containing about forty-six acres together with the dwelling-house and other buildings thereon erected, upon the condition of their conveying the said property to the Royal Institution for the Advancement of Learning, established by an Act of Parliament of the Province of Lower Canada entitled "An Act for the establishment of free schools and the advancement of learning in this Province." But in case the said institution should not, within the space of ten years from the time of his decease, erect and establish on the said tract of land, an university or college for the purposes of education and the advancement of learning in this Province, with a competent number of professors and teachers to render such establishment effectual and beneficial for the purposes intended, it was provided that the trustees should convey the said property to Mr. François Des-Rivières, the son of Mrs. McGill by her first marriage. It was also provided that the college or one of the colleges of the university to be so erected, should bear the name of the donor. Moreover, he gave under the same conditions to the Royal Institution a sum of ten thousand pounds for the maintenance and support of the said college or university, which sum was also to revert to Mr. DesRivières in case of non-compliance with the intentions of the donor. This sum if not paid immediately, was to bear interest after three years.

The Estate of Burnside is situated near the Mountain of Montreal, on the road that leads to the Priests' Farm, in a commanding position, and its value, like that of all properties lying in the same direction, has been daily increasing since the bequest was made of it by Mr. McGill.

As to the other part of the bequest, when paid over to the college authorities, after a long protracted suit with the heirs who had been advised by eminent counsel that the legacy was null, it amounted to £22,000.

The intentions of Mr. McGill did not meet that prompt execution which they merited. Great delay occurred before any movement whatever was made for securing the bequest and giving effect to his wishes. At last a Royal Charter was obtained in 1821. In 1829. the Estate of Burnside was surrendered by the residuary legatees, and in 1835 judgment was rendered against them for the legacy of £10,000 with interest.

The first step towards giving to the University a practical operation



Students' Reading Room.—Medical Library.

was the establishment of the Medical Faculty, which, with the exception of two years has always since been kept in activity. It has always been the most flourishing department of the Institution, and has been for many years the only one in active operation. It was created by the merging into the University of a pre-existing institution, "The Montreal Medical Institute."

The buildings, which had been commenced in 1839, were completed in 1843, and, although parts of them are still in an unfinished state, they were ready for the reception of students on the 7th of September.

The original plan of these buildings embraced a central building and two wings connected with corridors. Only the centre building and one wing on the left side have as yet been erected. Since the erection of Burnside Hall they have been occupied as residences by several of the officers of the college and Mr. Fronteau, the professor of French, receives in one of them a certain number of pupils as boarders. Young men from the country or from Upper Canada have the advantage under that arrangement of a very comfortable boarding house, together with that of learning the French language from one who is highly conversant with all its niceties and difficulties.

As may be seen by the accompanying engraving, the college buildings are placed in a commanding position and are surrounded by a large space of ground containing some fine trees and which has been improved recently by planting and the formation of a central avenue. It is expected that the College authorities will, ere long, complete the original design of the buildings and hold in them the classes of the faculty of arts, as intended at the time of their erection. When completed the whole front of the edifice will be 350 feet, and elevated as it is on a terrace surrounded by ornamental grounds, it will have a very imposing effect. Even in its present state the McGill College is one of the most remarkable objects in the scenery of the mountain of Montreal and never fails to attract the attention of the tourist.

The huge wall in the rear of the college is the terrace or embankment of the reservoir of the city water-works, deserving attention, and which draws many visitors to that spot. The site of the college buildings, as we have said, was for many years a very inconvenient distance from what was then the City of Montreal ; but it must be admitted that the directors cannot be blamed for its selection, particularly if they then had in view the rapid development which the city is acquiring every day.

* * * * * * * *

In addition to the buildings we have described, the members of the Faculty of Medicine hold a two-storey brick house of plain exterior situated in Coté Street. On the ground floor there are two large rooms occupied as a library, museum and lecture room. It is intended by the University to acquire this building and to enlarge and improve it to meet the increasing demands of the Faculty for additional accommodation.

As we have already stated, the Faculty of Medicine has from its commencement been a prosperous and important department of the University. The thoroughness of its course of studies has given it a high reputation and so established the value of its degrees that its certificates are received by the University of London and other British colleges.

The Dean of the Faculty is Professor A. F. Holmes, who has held that position for many years, and was connected with the University since its first establishment in 1823. He is now the senior professor of the whole University, and consequently the senior professor of the universities of Canada. He was also, when few men gave attention to these subjects, most influential in founding the Natural History Society and promoting the study of that science.

Professor Holmes lectures on the Theory and Practice of Medicine, including a full course of Pathology. The other professors of the Faculty are: Dr. Campbell on Surgery, Dr. Hall on Midwifery and Diseases of Women and Children, Dr. Fraser on the Institutes of Medicine, Dr. Sutherland on Chemistry, Drs. Scott and Craik on Anatomy, Dr. Wright on Materia Medica, Dr. Howard on Medical Jurisprudence, including toxicology, insanity and medical police and clinical medicine; Dr. McCallum on Clinical Surgery. Students are also required to follow one course of the classes of Botany and Zoology in the Faculty of Arts. The lectures of Drs. McCallum and Howard are given at the Montreal General Hospital twice in each week, and visits are made daily to the Hospital by the students.

The professors are all gentlemen well known in the community and some of them are known by their contributions to science. Dr. Hall has been for several years the editor of a medical periodical, and Drs. Wright and McCallum are now publishing the *Medical Chronicle*, a valuable review, the sphere of utility of which is about to be extended by the insertion of articles in the French language.

The tickets of the Faculty of Medicine are received by the British colleges and by those of the United States, whose tickets under similar regulations are likewise received by McGill College.

The library consists of nearly 3,000 volumes, among which are found not only the most valuable works for reference, but recent standard works on all the departments of medical literature, and moreover, those elementary works which are chiefly adapted for pupils, the use of which they are allowed without charge.

The museum, besides the preparations (wet and dry) of healthy and diseased structures, contains a considerable number of artificial preparations in wax and composition from the manufactories of Guy and Thibert, of Paris. The institution is also provided with an ice house and large and well ventilated dissecting rooms."

XV.

DR. JOHN STEPHENSON.

The following biographical sketch of Dr. John Stephenson was received from his son, Mr. John W. J. Stephenson, of London, England, in kind response to our enquiry:—

Dr. John Stephenson was born at Montreal in 1797 of Scotch parents. His education, for some time before he became a medical student, was received from the priests of the Roman Catholic "Collège de Montréal," who seem to have regarded him with affection during his life, and to have retained very kindly feelings towards his memory long after his death. He was, however, at no time a Roman Catholic.

He was apprenticed by his father on the 29th December, 1815, to Dr. William Robertson, of Montreal, as a medical pupil, the fee being £50 currency. This instrument bears an endorsation, dated 15th July, 1817 (signed by Dr. Robertson), which states that Mr. John Stephenson had served his apprenticeship "with the utmost integrity and honour, and neither spared pains for his own improvement, nor my interests."

He went to Edinburgh in 1817 as a medical student and took his M.D. degree there in 1820, his thesis being "De velosynthesis." In the meantime he had also, in 1819, passed the examination of the Royal College of Surgeons in London qualifying him to practice as a surgeon, and had studied in Paris under Roux and others. While he was in Paris, Dr. Roux performed an operation on him which is connected with the subject of his later thesis.

He returned to Montreal in 1821, where he practiced as physician and surgeon till his death in 1842.

On the 29th of October, 1832, he was appointed professor of anatomy, physiology and surgery in McGill College, Montreal.

He was married in 1826 to Isabella, eldest daughter of Thomas Torrance. All his children died before they were fifteen years old except one son, who went to Trinity College, Cambridge, where he graduated as 8th Wrangler in 1860, and who, after serving as a professor of Natural Philosophy and Astronomy in Calcutta for two years, and being called to the English Bar by the Society of the Inner Temple in 1867, entered the English Civil Service in 1870 and retired in 1900, being then an assistant secretary to the Board of Education. Dr. Stephenson resided at the time of his death in St. James Street.

The following are extracts from a letter of condolence from Dr. Joseph Workman, of Toronto, written 22nd March, 1842, to Mrs. Stephenson, soon after her husband's death. Dr. Workman had been a pupil of Dr. Stephenson.

"I would respectfully refer you to an article in the *Toronto Patriot* with my name appended, a copy of which I send you by same mail as this letter. A perusal of that communication will at once shew you of what importance I consider the facts therein related. I have, with anxiety, long waited the promulgation of these facts, and a narrative of the discovery upon which they were based from the pen of your late lamented husband, himself. Fully convinced that the increasing demands of his large practice, added to the weakness of his health latterly, must have left him no leisure to reduce the results of his valuable experience to writing—and thoroughly satisfied, as I am, of their vast importance to the best interests of humanity, I have deemed it incumbent on me to take an early opportunity of announcing them—and at the same time to assert on behalf of my late Tutor his claim to the honour of the discovery, that no unprincipled copyist of his system of practise might pretend to a merit which appertained to one no longer present to disprove the pretension."

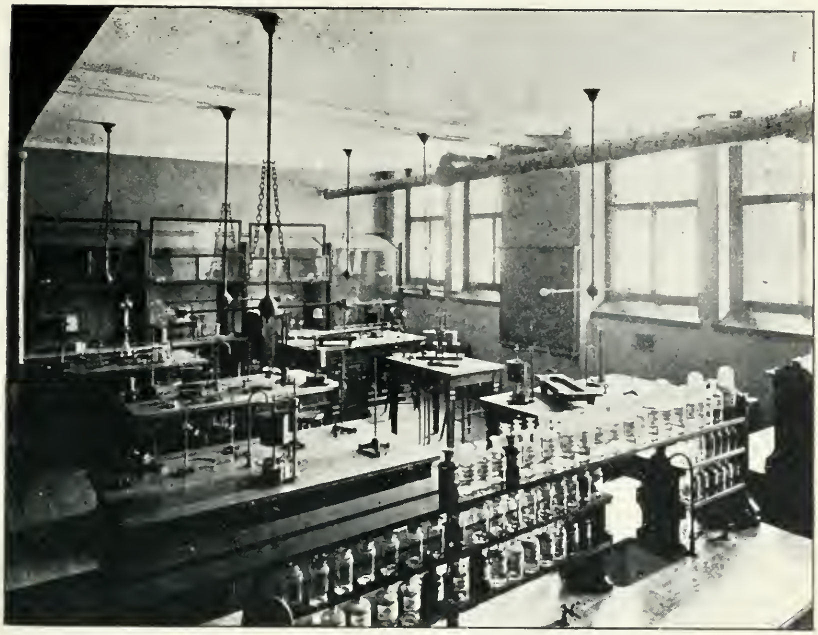
The discovery referred to here by Dr. Workman is said to have been something relating to the internal administration of white lead.

Dr. Workman says:—

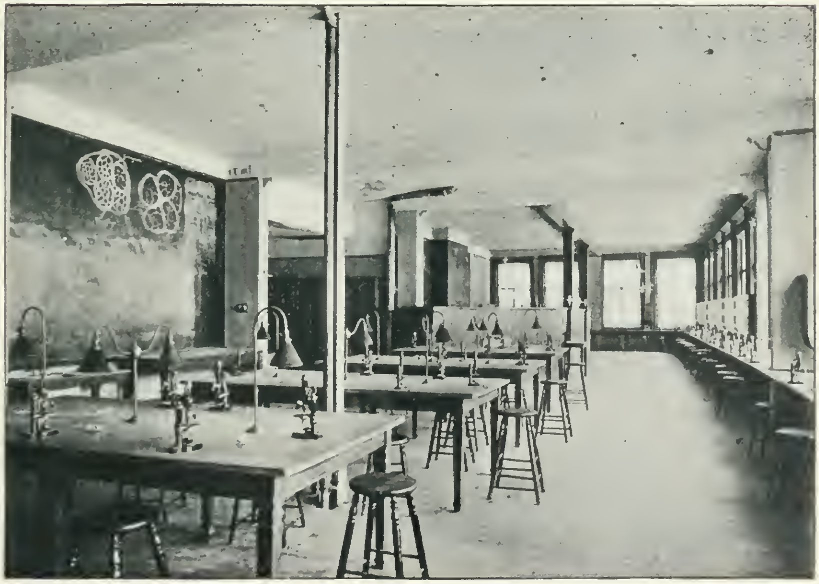
"I knew Dr. Stephenson's domestic character, next to yourself, the best of any who, perhaps, ever knew him. I knew his fidelity as a husband, his unfathomable affection as a father, his kindness as a master, his philanthropy as a man, and I think 'I shall not look upon his like again.' His benevolence to the poor was known to me, for I was in hundreds of cases the instrument employed by him to impart it. I never once knew him refuse to go to the sick bed of the distressed. Indeed, I have known his attendance upon the cases of the indigent sometimes command his time to the disadvantage of more lucrative calls."

Dr. Stephenson seems to have made the first move in the organization of the Montreal Medical Institution and to have had a large share in securing the bequest of the Hon. James McGill to the University. In an introductory address delivered at the Semi-Centenary Celebration of the Medical Faculty in 1882, the late Dr. R. P. Howard says:—

"It would appear from the records of the Montreal General Hospital that most probably to Dr. Stephenson belongs the honour of originating the Medical Institution, for in the minutes of the meetings of the Governors of the Hospital under date August 6th, 1822, this entry is found: 'That Dr. Stephenson be allowed to put in his advertisement for lectures next winter that they will be given at the Montreal General Hospital.' That his example bore fruit is shown by the minutes of the meeting 4th February, 1823, where it is noted that the medical board of the hospital communicated to the Governors its intention 'to deliver lectures on the different branches of the profession.' So great was the eagerness of young Stephenson in the cause of education, and so much did he deplore the absence of any provision for the proper education of the English-speaking people of the Province, that his nephew, William Whiteford, Esquire, of the Temple, in a short notice of his uncle kindly written for me, and to which I am indebted for many of the facts herein stated, observes that he 'was the first to begin the agitation which resulted in wresting from the hands of the heirs of Mr. James McGill the bequest of that gentleman towards a college,' but, 'except from his own profession, he received very little sympathy.' That the University is largely indebted to its Medical Faculty as a whole and to Dr. Stephenson in particular, for the recovery of the bequest made to it by its founder, is further rendered probable by the fact that a meeting of the Governors of the College, held on 29th July, 1833, it was 'Resolved, that the Medical Faculty of the College be authorized to use the means necessary to forward the interests of the College in the suit now pending touching the ten thousand pounds bequeathed by the late Hon. James McGill,' etc. At the same meeting Dr. Stephenson was nominated Registrar to the University. I have been informed by a reliable person (Dr. James Workman) that the successful issue of the contest and the recovery of the estate was largely due to the untiring energy and personal influence of Dr. Stephenson. And this opinion is borne out by the testimony of the late Hon. Peter McGill, who, in some letters of introduction given many years ago to Mr. Whiteford speaks of his uncle (Dr. S.) 'as the man, of all others, to whom we owe the existence of McGill College.' He did good work also as a teacher in the two institutions with whose foundation he was so intimately connected, having lectured upon anatomy and surgery from 1824 to 1835, and subsequently upon anatomy only up to the year of his decease, 1842. He is said to have been an able and eloquent lecturer, and was a man of con-



Laboratory of Pharmacology, 1901.



Laboratory of Normal Histology, 1901.

siderable culture and great industry. For many years he had a large share of the confidence of the public as a practitioner, and, until the time of his death, his name was a household world amongst all nationalities in this city."

XVI.

THE ORGANIZATION OF THE MONTREAL MEDICAL INSTITUTION.

Minutes of the Montreal Medical Institution.

J. Stephenson, M.D., Secretary.

Montreal, 20th October, 1823.

At a meeting of the Medical Officers of the Montreal General Hospital, viz. : Mr. Robertson, Wm. Caldwell, A. F. Holmes, John Stephenson and H. P. Loedel, held for the purpose of taking into consideration the expediency of establishing a medical school in this city.

IT WAS UNANIMOUSLY RESOLVED THAT the considerations which seemed to warrant an endeavour to promote such a desirable object should be drawn out and laid before the next meeting of the Board, to be held on the 27th inst., and that Drs. Stephenson and Holmes be appointed a committee for the same purpose.

Montreal, 27th October, 1823.

At a meeting of the Medical Officers of the Montreal General Hospital held this day, Present :— Wm. Robertson, Wm. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel, Drs. Stephenson and Holmes laid before the meeting the following, which was approved of, viz.:—

"The medical officers appointed by the President and Directors of the Montreal General Hospital, having seen the great difficulties which the student of medicine in this country has to encounter before he acquires a competent knowledge of his profession : knowing the great inconvenience resulting to many from the necessity at present existing of spending several years in a foreign country to complete a regular medical education ; and being convinced of the advantages which would result from the establishment of a medical school in this country, have met to consider of the possibility of founding such an institution in this city.

"After due deliberation they conceive that the following considerations warrant an endeavour to promote so desirable an object :—

1st. There can be but one opinion concerning the utility and necessity of a school of medicine in this Province, seeing that the condition of medicine in many parts sufficiently attests the want of opportunities of a medical Institution, such an institution will tend very much to remove this growing evil by the facility it will afford of acquiring medical knowledge.

2nd. There can be little doubt that students from different parts of this Province as well as from Upper Canada, and probably from the adjoining states, would be eager to profit by the opportunities thus afforded of acquiring a sound medical education. Those who might not intend to pursue their studies at a foreign university would be enabled to obtain an adequate knowledge of all the useful branches of medicine, while those who, after attending this institution, might wish to enjoy the advantages of study in other countries, would be better able to benefit by them.

3rd. They consider that the Montreal General Hospital is an institution which favours much the establishment of a school of medicine in this city,—it affords the student a facility of acquiring a practical knowledge of Physic never before enjoyed in this Province—an advantage which will be greatly enhanced by the establishment of lectures on the different branches of the profession.

4th. If such a plan should be carried into effect, a pecuniary benefit would result to the funds of the hospital, highly advantageous in their present state.

5th. They are further encouraged to attempt the formation of a medical seminary when they reflect that at the medical school of Edinburgh, the basis of which they would adopt for the present institution, now justly considered the first in Europe, is of comparatively recent formation, it being little more than one hundred years since medical lectures were first delivered in that city,—and the early history of the Royal Infirmary of Edinburgh is not dissimilar to that of the Montreal General Hospital.

6th. In the event of the establishment of a classical and philosophical seminary in this city, the two institutions would be materially benefitted.

7th. To ensure the success and permanency of such an institution it would be highly desirable that the persons composing it should be associated by a Royal Charter or Act of Incorporation.

8th. Should such a desirable object be obtained, the following gentlemen in furtherance thereof have agreed to deliver lectures on the several branches of the profession :—

Anatomy and Physiology—by Dr. Stephenson.
Chemistry and Pharmacy—by Dr. Holmes.
Practice of Physic—by Dr. Caldwell.
Midwifery and Diseases of Women and Children—by Dr. Robertson.
Materia Medica—by Dr. Loedel.
Botany—by Dr. Holmes.
Surgery—by Dr. Stephenson.

2nd November, 1823.

It was resolved that Dr. Robertson be requested to forward the same to His Excellency the Governor-in-Chief for his consideration.

Montreal, 4th December, 1823.

At a meeting of the Medical Board of the Montreal General Hospital, present : Wm. Robertson, Wm. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel, Dr. Robertson informed the Board that he transmitted to His Excellency the Governor-in-Chief the document which he was requested to forward, accompanied by a letter in which he suggested to His Lordship the propriety of new modelling the Board of Examiners at Montreal and including the names of the Medical Officers of the Montreal General Hospital, to which he received the following answer through A. W. Cochrane, private secretary.

J. Stephenson, M.D.,
Secretary.

Castle of St. Louis, Quebec,

13th of November, 1823.

Sir :

His Excellency, the Governor-in-Chief, directs me to acknowledge the receipt of your letter to him of the 2nd inst., and to acquaint you that he approves of your suggestion for the new modelling of the Board of Medical Examiners at Montreal. And also of the scheme proposed in the paper which accompanied your letter, by the Medical Officers of the Montreal General Hospital for connecting with that establishment a medical school for giving a course of lectures on the different branches of that science.

His Excellency will readily join his support to this desirable object and will do all in his power to assist the endeavors of the medical gentlemen who have come forward in so liberal a manner. For this purpose he is ready to cancel the appointment of the Board of Examiners already existing and to form a new Board consisting of the Medical Officers of the Montreal General Hospital. But before this step is taken I am to suggest to you that as, by the Charter of the Montreal General Hospital now sanctioned, these officers may be changed every year, or oftener if requisite, some inconvenience may arise from this circumstance, which you may be able to suggest the means of obviating. The latter part of your proposal also—that the gentlemen who intend giving lectures in the medical school (and who may be seven in number) should be included in the Board of Examiners—seems in some degree to clash with the former part when it is recommended that the Medical Officers (limited to five by its rules) should form the Board. And I am further to request you will consider whether in the event which may occur under the Charter, of the gentlemen giving lectures ceasing to be officers of that institution, the Board of Examiners would not become inconveniently numerous if made to include both the Medical Officers of the institution and the lecturers in the medical school, which having no charter or public corporate existence, is only connected accidentally and by the voluntary act of its members with the hospital.

I have the honor to be, Sir,

Your most obedient servant,

(Signed) A. W. Cochrane,

Secretary.

To Wm. Robertson, Esq., Montreal.

Montreal, 10th October, 1823.

At a meeting of the Medical Officers of the Montreal General Hospital, present : Wm. Robertson, Wm. Caldwell, A. F. Holmes, J. Stephenson and H. P. Loedel.

It was resolved that Dr. Robertson be requested to answer the letter received from A. W. Cochrane, bearing date the 30th ult., of which answer the following letter is a copy :—

J. Stephenson, M.D.

Secretary.

Letter of Dr. Robertson to
A. W. Cochrane, Esq., Prov. Sec.

Montreal, 10th October, 1823.

Sir :

I have the honor to acknowledge the receipt of your letter of the 30th ult., and to express my own (and the gentlemen with whom I am connected) satisfaction at the interest His Excellency takes in the proposed measure for establishing a medical school in Montreal, to assure him no exertion on our part will be wanting to ensure the success of the institution. We intend to commence delivering regular courses of lectures next fall. The Medical Officers of the Montreal General Hospital are elected by the Board of Directors, but not annually, when once appointed they continue in office until some cause for their removal occurs and such were the conditions expressly understood and declared at the time of drawing up and approving the rules for the government of the hospital, on which they were elected. By the Charter of the New York Hospital the Governor or any seven of them legally convened and met (the President or Vice-President being one) had authority to elect, appoint and nominate the physicians and surgeons *from time to time.* When a commission is issued appointing members to the Board of Examiners, the names of the individuals composing the medical board of the hospital will, I presume, be inserted, and should any of those gentlemen hereafter cease to belong to the hospital, but still continue to lecture, it will be for the Governor's consideration whether or not they will be continued on the Board of Examiners or if the person elected be added to the members. Circumstances may require some alteration in the mode of constituting the Board.

The proposal I took the liberty of submitting for consideration was meant to apply to the existing state of things.

Upon enquiry I find that a number of persons who at different times were appointed Examiners, continued to belong to that Board although several of them have left the Province, but for some years past the only individuals who act are, Drs. Loedel, Arnoldi and myself.

I remain, Sir,

With consideration, &c.

(Signed) Wm. Robertson.

To A. W. Cochrane, Esq., Quebec.

Montreal, 4th February, 1823.

At a meeting of the Medical Board of the Hospital, Present : Wm. Robertson, Wm. Caldwell, J. Stephenson, A. F. Holmes and H. P. Loedel.

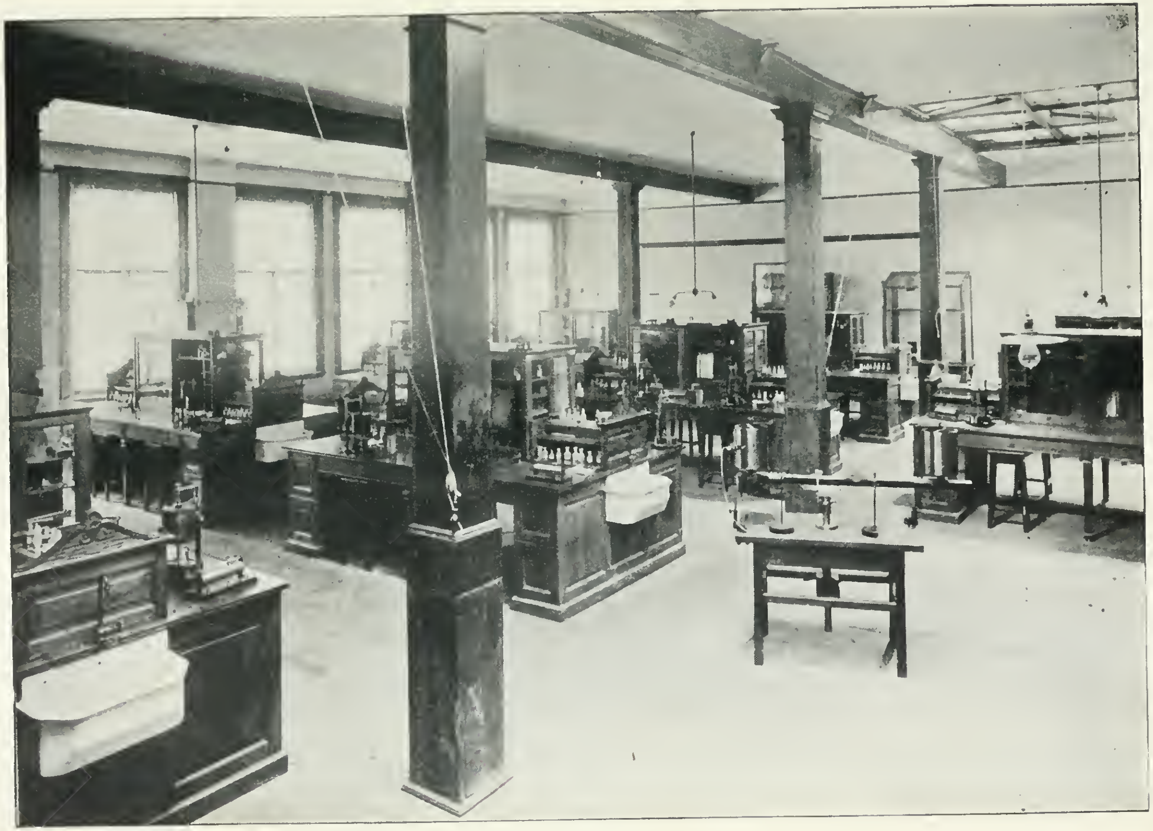
IT WAS RESOLVED THAT the following copy of an advertisement intended to be published in the public papers of the Lower and Upper Canadas, be transmitted by Dr. Robertson to His Excellency the Governor-in-Chief for his approbation, viz.:—

Letter from Dr. Robertson to the Secretary enclosing the aforesaid advertisement.—

Montreal, 4th February, 1823.

Sir,

I have the honour of enclosing the copy of an advertisement which we



Laboratory of Physiology, 1901.

intend to publish in the papers next Saturday week providing His Excellency has no objection to his name being used as approving of the proposed measure. I should be happy to know if the Medical Board of Examiners at Montreal is to be new modelled soon, if the alteration formerly suggested were to be adopted, then promulgation about the same time that an advertisement appears would be a demonstration probatory of the interest which His Lordship takes in the success and prosperity of the Institution.

I have the honour to be,
Sir,
Your Obt. servt.,
(Sig.) WM. ROBERTSON.

To A. W. Cochran, Esq.,
Quebec.

MONTREAL MEDICAL INSTITUTION.

The Medical Officers of the Montreal General Hospital having seen the great difficulties which the student of medicine in Canada has to encounter before he can acquire a competent knowledge of his profession : knowing the inconveniences resulting to many from the necessity at present existing of spending several years in a foreign country to complete a regular medical education, and considering that the recent establishment of the Montreal General Hospital affords the stulent a facility of acquiring a practical knowledge of Physic never before enjoyed in these Provinces, and that this advantage will be greatly enhanced by delivering courses of lectures on the different branches of the profession, held a meeting to consider of the practicability of founding a medical school in this city.

The circumstances which rendered the success of such an institution probable and the measures intended to be adopted for carrying the same into effect having been submitted to His Excellency, the Governor-in-Chief, he was pleased to signify his entire approbation of the plans.

It is therefore resolved to deliver lectures on the following branches of the profession to commence in the second week of November ensuing :—

Anatomy and Physiology	J. Stephenson, M.D.
Chemistry and Pharmacy	A. F. Holmes, M.D.
Practice of Physic	W. Caldwell, M.D.
Midwifery and Diseases of Women and Children	W. Robertson, Esq.
Materia Medica	H. P. Loedel, Esq.
Surgery	J. Stephenson, M.D.

In the course of the summer, 1824.

Botany	A. F. Holmes, M.D.

Montreal, 4th February, 1823.

Montreal, 4th March, 1823.

At a meeting of the Medical Officers of the Montreal General Hospital, Present: Wm. Robertson, W. Caldwell, Stephenson, A. F. Holmes and H. P. Loedel.

Dr. Robertson laid before the meeting an answer which he read from Mr. Cochrane to his letter of 4th February, 1823, as also a commission, appointing, commissioning for the examination of persons to be licensed to practice Physics, Surgery, etc., etc., accompanied by a letter from the Secretary.

Copy of a letter from A. W. Cochrane to Dr. Robertson :—

Castle of St. Louis,
Quebec, 8th February, 1823.

Sir,

I have the honour to return you herewith the draft which you enclosed to me, of the advertisement proposed to be inserted in the Montreal newspapers respecting the projected medical institution, and I am to acquaint you that His Excellency, the Governor-in-Chief, has no objection to your mentioning as therein stated, that he approves of the plan. I am further to acquaint you that His Excellency has determined upon issuing a new commission for the Board of Medical Examiners on the plan stated in my letter to you of the 30th 9ber last.

I have the honour to be,
Sir,
Your most obt. servt.,
(Sig.) A. W. COCHRANE,
Sec.'y.

To Dr. Robertson.

Copy of letter from the Secretary to Dr. Robertson accompanying the commission alluded to above,—

Castle of St. Louis,
Quebec, 28th February, 1823.

Sir,

I have the honour to transmit you the enclosed commission appointing you and four other gentlemen therein named to be the Board of Medical Examiners for the District of Montreal.

I have the honour to be,
Sir,
Your most obt. serv.'t,
(Sig.) A. W. COCHRANE,
Sec.'y.

Wm. Robertson, Esq.

COPY OF THE COMMISSION.

Province of Lower Canada :

By His Excellency George, Earl of Dalhousie, knight, Grand Cross of the Most Honourable Military Order of the Bath, Captain, General and Governor-in-Chief in and over the Province of Lower Canada, Vice Admiral of the same, etc., etc., etc.

To William Robertson, Esquire, William Caldwell, M.D., John Stephenson, M.D., A. F. Holmes, M.D., and H. P. Loedel, Esquire, and to all others whom those Presents may concern.

Persuant to an Act or ordinance, made, provided and passed in the twenty-eighth year of his late Majesty's reign entitled "An Act or Ordinance to prevent persons practicing physic and surgery within the Province of Quebec, or midwifery in the towns of Quebec or Montreal, without a license." I do hereby appoint you or any three or more of you, the said Wm. Robertson, William Caldwell, John Stephenson, A. F. Holmes and H. P. Loedel, in some public or convenient place and time to examine and enquire into the knowledge of every such person as ought to have such certificate or license as by the said Act or Ordinance is required for the uses and benefits therein mentioned—and know ye further that I the said George, Earl of Dalhousie, do by these presents determine, revoke and make void all and singular the commissions heretofore granted and in force for the appointment of medical examiners for the said District of Montreal, and all matters and things therein contained, hereby declaring the same to be null and void and of no effect.

Given under my hand and seal-at-arms at the Castle of Saint Louis in the City of Quebec in the said Province of Lower Canada the twenty-second day of February in the year of Our Lord one thousand eight hundred and twenty-three.

(Sig.) Dalhousie,
Governor.

By His Excellency's
Command,
Montizambert, Actg. Prov. Secy.

Montreal, 10th Aug., 1823.

At a meeting of the members of the Montreal Medical Institution, Present: Wm. Robertson, Wm. Caldwell, A. F. Holmes and H. P. Loedel.

Dr. Loedel, intimating by Dr. Holmes that he did not wish to continue a member of the Montreal Medical Institution, Dr. Lyons was recommended as a proper person to fill the vacant chair, which was unanimously agreed to by the other members.

It was resolved: 1st.,To establish a medical library—to carry which into execution the members of the institution have imported some of the periodical Medical Journals as a commencement.

2nd. That lectures commence on Monday the 2nd of November.

3rd. That the hours of each lecture be as follows:—

Wm. Robertson, from	3 to 4 p.m.
A. F. Holmes, from	10 to 11 a.m.
Wm. Lyons, from	9 to 10 a.m.
Wm. Caldwell, from	11 to 12 a.m.
J. Stephenson, from	2 to 3 p.m.

4th. That the fee for each class or department be three guineas.

5th. That the Treasurer—which Dr. Robertson is hereby requested to be—be requested by the Secretary—which Dr. Stephenson is also hereby requested to be—to procure a porter for the institution.

6th. That the lectures be advertised in two of the papers of this city, in one of Quebec, the Kingston Chronicle and the Albion—to be continued three weeks in the Montreal papers and the Albion and two weeks in the others.

7th. That the meeting be held again on Thursday next, 17th inst., at the house of Dr. Robertson.

8th. That Drs. Lyons and Holmes be appointed a committee to draw up rules for the government of the library and the subscribers thereto.

Form of the advertisement to be published :—

MONTREAL MEDICAL INSTITUTION.

The lectures will commence at the house of the institution, No. 20 St. James St. on Monday, 10th November next, Materia Medica and Dietetics, Monday 9 a.m. ; W. Lyons, Esq., Practice of Physic, Tuesday 10 a.m. ; Wm. Caldwell, M. D., Chemistry and Pharmacy, Monday 11 a.m. ; A. F. Holmes, M.D., Anatomy, Physiology and Surgery, Monday 2 p.m. ; J. Stephenson, M.D., Midwifery and Diseases of Women and Children, Wednesday 3 p.m. ; Wm. Robertson, M.D.

N.B. Visiting hour at the Montreal General Hospital, noon. Lectures on Botany will be given by Dr. Holmes during the entire summer.

J. Stephenson, M.D.,
Secretary.

Montreal, 27th Sept., 1823.

A meeting of the members of the Montreal Medical Institution, Present: Wm. Caldwell, Wm. Robertson, A. F. Holmes, J. Stephenson and Wm. Lyons.

Drs. Lyons and Holmes laid before the meeting the following rules for the government of the library and its subscribers, viz :—

1st. The library is exclusively the property of the members of the institution collectively.

2nd. No member can transfer his share of the library.

3rd. The library cannot be dissolved without the unanimous consent of the members.

4th. Any member of the institution dying or resigning his situation, loses all right as proprietor of the library.

5th. Any person becoming a member of the institution, becomes likewise a proprietor of the library with rights equal to those of an original proprietor, provided he pays to the Treasurer one half of the amount of subscription paid by the original proprietors.

6th. Should the Medical Institution be dissolved, the library shall still remain unless dissolved by unanimous consent. In case of the dissolution of the institution it may be lawful for the proprietors to admit a greater number of proprietors and new model the library.

These regulations were unanimously adopted by the meeting..

J. Stephenson, M.D., Secy.

Montreal, 6th 8 ber., 1823.

At a meeting of the members of the Medical Institution, Present: Wm. Robertson, Wm. Lyons, A. F. Holmes, J. Stephenson.

It was resolved: 1st. That each member pay immediately to the Treasurer £7 10s for contingent expenses.

2nd. That Dr. Holmes be the Librarian to the institution.

3rd. That the subscription to the library be 10s for students.

4th. That each member pay annually on the 1st of May £2 10s for the support of the library.

5th. That circulars be sent to all medical practitioners of the city by Dr. Holmes, intimating to them that a medical library is established to which they can subscribe by paying one guinea per annum.

6th. That the lectures be again published in the newspapers, four weeks in the Montreal Herald, Kingston Chronicle, Quebec Gazette and the Albion.

7th. That the tickets be printed or engraved and to have "Montreal Medical Institution" at the top.

8th. That Dr. Lyons' lecturing hour be from 9 to 10 a.m.

The meeting having no further business before them adjourned to Tuesday next at 1 p.m., and the meetings take place at the house of the institution, No. 20 St. James Street.

J. Stephenson, M.D.,
Secretary.

XVII.

REPORT OF THE FIRST MEETING OF GOVERNORS OF McGILL UNIVERSITY.

From the Minutes of the Meetings of the Governors of the University of McGill College, situated at Montreal.

BURNSIDE UNIVERSITY OF McGILL COLLEGE.

At a meeting of the Governors of MsGill College, Montreal, 29th June, 1829, there were present: The Lord Bishop of Quebec, the Hon. Chief-Justice Reid and the Venerable Archdeacon Mountain.

A large room in the house, which has been for some time existing on the estate, having been fitted up, it was soon after 10 o'clock filled by the numerous and respectable individuals who had assembled to witness the ceremony. Among the company was noticed several officers of the Government, the principal members of the Bar, the lecturers at the Montreal Medical Institution and several gentlemen more or less connected with the proposed college.

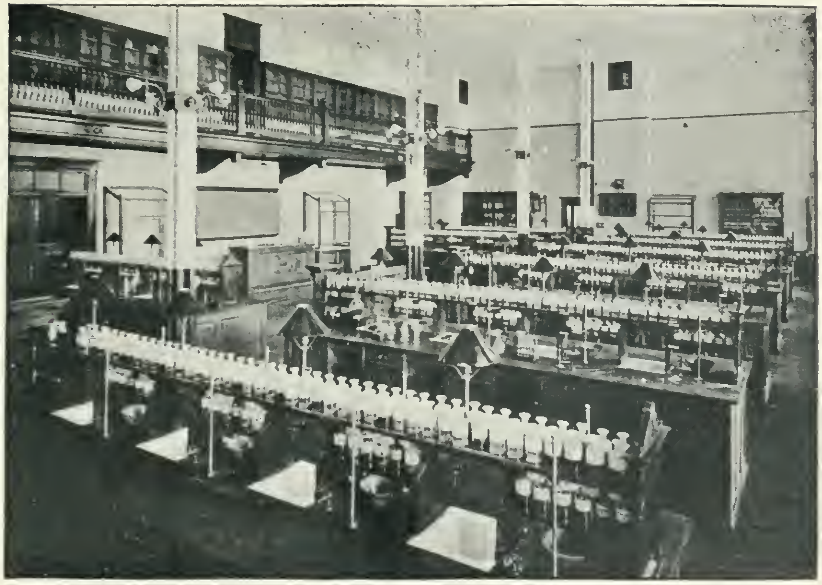
The Right Reverend, the Lord Bishop of the Diocese, attended by the Reverend G. J. Mountain, D.D., the Reverend J. L. Mills, D.D., the Rev. B. B. Stevens, A.M., the Rev. A. M. Morrison and the Rev. A. F. Atkinson of Montreal; the Rev. James Reid of St. Armand; the Rev. W. Abbott of St. Andrews; the Rev. J. Abbott of Yamaska; the Rev. J. Braithwaite, A.B., of Chambly; and the Rev. H. Esson and E. Black of the Kirk of Scotland in Montreal, having entered the hall, the business of the day was soon after proceeded upon.

The Royal Charter incorporating the governors and professors of the university, being placed on the table, His Lordship the Bishop of Quebec, arose and addressed the assembled body; he stated that he had received a letter from Sir James Kempt, Adminstrator of the Government, expressing the impracticability of his being present at the ceremony of opening the University of McGill College fixed for to-day. His Lordship then submitted to the Governors the statement he proposed to make previous to the reading of the Charter, and the course of the ceremonies to be observed on the occasion. He stated that in consequence of the absence of His Excellency, the Administrator of the Government, who was one of the Governors of the Corporation of McGill College, it became incumbent on him to make a few remarks on the present occasion. He would, however, first state that he was commissioned by His Excellency to express his regret that in consequence of the very late arrivals of the April and May mails he was unable to leave Quebec in time to assist at the ceremony of promulgating the Charter which had been conferred on the College. His Excellency in his letter was pleased to add that he would not fail to use all his exertions to promote the institution.

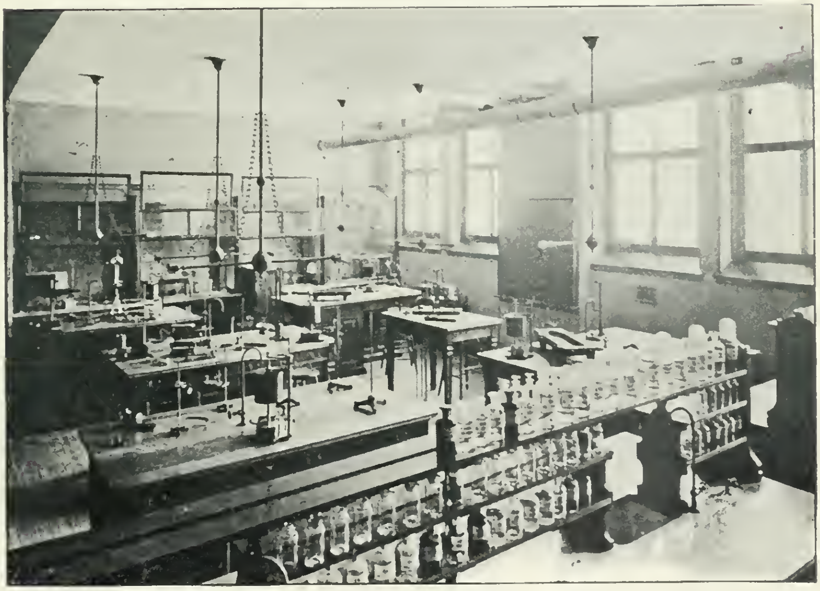
Having fulfilled this duty the Lord Bishop begged to observe that the bequest which had been made in favor of this college by the late Hon. James McGill, consisted of the valuable estate of Burnside, comprising the building in which they were then assembled and the garden and grounds adjoining, together with the sum of £10,000 in furtherance of his benevolent intention. This liberal bequest was made in 1811 (two years previous to the death of Mr. McGill), in trust to a corporation called the Royal Institution, which was contemplated by an Act passed in 1801. This institution was to transfer the bequest when a college, in pursuance of his views, was established and bearing his name. To this most benevolent legacy he could not help referring as characteristic of its liberal donor, with whom he had the honor of an acquaintance, and as furnishing an example which he hoped to see more frequently followed in the Province.

The late Mr. McGill who had amassed a very large and a very considerable fortune within the country did not, like many others, leave the Province and spend his money in some other part of the globe, but, having no direct heirs, he had left a very handsome legacy for the laudable purpose of commencing an university in a country where such an establishment was very desirable.

The institution was to bear the name of its excellent founder, and he firmly hoped that it might prove a blessing to many generations yet to come, that it might tend to immortalize his name and be the best monument that could be erected to his memory. The Royal Institution was incorporated in 1818, and through their instrumentality this college was, in pursuance of the will of Mr. McGill, incorporated in 1821, by a Charter which he read to them. Under that Charter the governors of the college were the Governor and Lieutenant-Governor of Lower Canada, the Lieutenant-Governor of Upper Canada, the Chief Justice of Montreal and Upper Canada, the Lord Bishop of Quebec and the Principal of the college. It would be needful for him to refer to the detentions and obstacles which had hitherto prevented the college from going into operation; it was known that this arose from the residuary legatee under the will of Mr. McGill disputing the legality of the bequest, and carrying his opposition through



Laboratory of Chemistry, 1901.



Laboratory of Pharmacology, 1901.

all the courts of the Province, till His Majesty in his Privy Council had finally given the decision in favor of the institution, whose duty it had become to prosecute for the recovery of the bequest. The suit in relation to the money bequeathed to the college was still before the Council, but he was happy to say that the residuary legatee intended to withdraw all further opposition.

It was the intention of the Royal Institution to transfer to the governors of the college the property of Burnside, and on the part of the governors he was authorized to say that they were willing to accept of it. A majority of them were either now present or consenting, for he was charged with the consent of the Governor of this Province and the Lieutenant-Governor of the adjoining Province, both of whom had expressed a desire to attend on the present occasion and it was known that there was now no Chief Justice in Upper Canada. On the part of the majority he accepted from the Royal Institution, the Charter which the secretary of that body would now read.

The Rev. Dr. Mills, Secretary to the Royal Institution for the Advancement of Learning, then read at length the Charter of the college.

The Lord Bishop then again rose and said that he was authorized on the part of the governors of the new college to state it to be their intention, as far as it was in their power, to carry into effect the liberal intentions of the late Mr. McGill. It was not a work in which they themselves were solely interested, but it was an institution which concerned every inhabitant of the Province, and under such feeling the governors were determined that no obstacles should deter them from following and prosecuting the views of the testator.

He deemed it unnecessary for him to exhort them upon the advantages of education as he was sure they were all of opinion that a moral and religious education, christian principles and a scientific course of studies on a true philosophical system were what it was their bounden duty to promote. The governors in assuming the Charter hoped that their exertions would meet with the co-operation of every individual within the Province.

The Venerable Archdeacon Mountain then rose and stated that as the individual named to fill the honorable office of principal of the new college, it became his duty now to say a few words. He could not but express his sense of his own unworthiness for such a distinguished office and he firmly hoped that he would be succeeded by a long line of eminent and learned principals. He had it in charge to state their anxiety to put the college into immediate operation, and he might urge as a proof of their wish that they had not been idle in this respect. With the assistance of the Hon. Mr. Cochrane, then present, they had been engaged in preparing and modelling a constitution and rules for the government of the institution. Although it was not necessary to detail at present their precise nature, yet he could take upon himself to state that they were liberal in every sense of the word, imposing no test upon professors or students. In thus applying the word liberal he wished it to be distinctly understood that he was not conveying the charge of illiberality against the noble and venerable institutions of the Mother Country, in which a test was properly exacted, of conformity to the national religion—but there were local circumstances which required local adaptation; and according both to the term 3 of the will and the provisions of the Royal Charter, all offices whatever in McGill College were left freely open either to the Protestants or Roman Catholics and students of all denominations would be permitted to attend. He deemed it necessary to explain how the present professors happened to be all members of the Church of England. When found necessary to name professors in virtue of the Charter of the college his late father, then Bishop of the Diocese, had submitted several names to His Excellency, the Earl of Dalhousie, for these offices, among which those of the Rev. Archdeacon Strachan and the Rev. Dr. Harkness having been proposed as eligible either one or the other, to the same professorship. His Excellency, whether swayed by a feeling of delicacy and desire to avoid the appearance of partiality, on account of his being himself a member of the Church of Scotland, or from whatever cause, decided in favor of the former gentleman. This circumstance was mentioned in proof that the original as well as the present intention of the governors was in all respects to show due respect to the intentions of the will of Mr. McGill and the terms of the Charter.

It had been deemed necessary for the present to declare that the professors should be graduates of some British university, but that a preference should hereafter be shown to those who had graduated within its walls. The governors would feel it to be their duty under all discouraging instances to push on the great undertaking and never to cease in their exertions for its prosperity. They hoped they would meet with general support, and they trusted with confidence that they would be asisted by all when the very liberal terms of the will and Charter were considered. It would be necessary for them to make a strong and powerful appeal to the Mother Country and they expected great pecuniary assistance from those resident near the establishment, and more directly interested in its prosperity.

They would, as soon as possible, establish a system of collegiate education and there was a predisposition to engraft upon the college the well-known and respectable medical institution now in existence in the city. The door of the building was at length open and it was the duty of all to proceed with vigour. They might at first complain of a great want of means for such an institution, for it required much to place it on a respectable footing, but while they thus looked forward with confidence they should not be unmindful that the Province was highly indebted to the very liberal disposition of Mr. McGill who had set such a praiseworthy example to his fellow-citizens, whose duty it now became generally to aid his work and follow up his munificent views.

The Archdeacon concluded his address by expressing his convictions that all who were present felt alike the dependence of every human undertaking for its success upon the blessing of the Divine Providence and would be therefore unanimously ready to join in the religious services with which it was proposed to conclude the business of the day, and in which he accordingly proceeded.

The 8th chapter of Proverbs, which had been selected as appropriate to the occasion was first read; after which the following verses selected from different Psalms were repeated in the way of alternation—the responsive part being sustained by the other clergy of the Church of England who were present.

* * * * * * * *

The Archdeacon then proceeded with the following prayers.

* * * * * * * *

Then followed the prayer for the church militant from the Liturgy, with some adaptations to render it immediately applicable to the local authorities and to the occasion of the day. The Assembly was dismissed by a blessing pronounced by the Bishop.

"The public business having been closed, the Governors of the Corporation held an interview with the members of the Montreal Medical Institution who had been requested to attend the meeting for that purpose. During this interview it was resolved by the Governors of the Corporation that the members of the Montreal Medical Institution (Dr. Caldwell, Dr. Stephenson, Dr. Robertson, Dr. Holmes) be engrafted upon the college as its Medical Faculty, it being understood and agreed upon by and between the said contracting parties that until the powers of the Charter would be altered, one of their number only should be university professor and the others lecturers. That they should immediately enter upon the duties of their respective offices. All of which arrangements were agreed to.

(Signed) J. STEPHENSON, M.D.,
Registrar of the University.

29th June, 1829.

Next meeting held April 30th, 1830.

XVIII.

THE BUILDING OF 1872.

Extract from the University Calendar of 1873-74, describing the building of 1872.

"It affords the Faculty much pleasure to be able to announce that the beautiful and commodious new building erected by the Governors of the University for the use of the Medical Faculty, has been completed and was occupied by the Faculty during the last session.

The following extracts from Professor Wright's opening lecture, delivered in the new buildings at the commencement of last session, will convey some idea of the magnitude and completeness of the edifice :—

"The stately building wherein we are met, has been built by the Governors of the University out of the funds at their disposals, at a cost of $27,000, in addition to which sum the Dean and members of the Faculty of Medicine have contributed several thousand dollars to complete the internal fittings on a corresponding scale.

"The building is 80 feet front by 84 feet 8 inches deep, and 48 feet high to the top of the cornice, with a further elevation of seven feet in the roof. The latter is a half mansard, broken by three pediments and covered with slate. The walls are solidly built of cut stone.

"On the east side facing University Street, is the students' entrance leading into the basement. The lobby leads into a passage which, like the other halls, is 12 feet wide. On its left is a waiting room, 30 feet by 32 feet 6 inches, furnished with chairs and tables. It is intended for resort during the intervals between lectures, where you may fill up your notes or otherwise profitably occupy yourselves. A strip is partitioned off and fitted to serve as a cloak room. On the right are the apartments of the caretaker, and on this room are also sparerooms, closets, furnace and fuel cellar. The apartments having floors are based with concrete.

"On the south side is the main entrance, facing Sherbrooke Street. Having ascended the flight of stairs in front and crossed the lobby, you first meet two apartments, one on either side for a library and museum respectively. Behind these are the chemical class rooms, with the professor's room, the former 30 feet by 46 feet, seated to hold 190 comfortably, and the laboratory 32 feet 6 inches by 32 feet for Practical Chemistry Class. It is provided with furnace, balance room and all other necessary requirements. This floor 'the ground floor' is also approached by a short stair running up from below.

"On the first floor, or one above the last is the general class room on the right hand side of the landing. It is 33 feet wide by 43 feet 2 inches deep. It has 11 tiers of seats, arranged as in the other class rooms in trilateral shape with desks and backs, regularly graded and able to contain 208 persons. Into it two doors open, the uppermost one being exclusively for the convenience of students. Close by are two side rooms, one for the use of professors, the other for the materia medica cabinet. On the opposite side is another class room, the Anatomical, 32 feet 10 inches by 43 feet, and seated for 180, it is supplied with seven tiers of seats and is well lighted with front and side windows and glazed skylight. Behind is the dissecting room 56 feet 10 inches long, and 30 feet 2 inches broad, provided with sink, light, as well as all other essential appointments, and having its floor covered with lead. At its end are two small rooms, one for the professor, and the other which opens into it for the demonstrator.

"The building will be warmed by hot water in circulation through coils and pipes of iron. Fittings are placed wherever gas may be needed. Means have been devised to ensure sufficient ventilation, and the acoustic adaptation of the lecture rooms has also been regarded. In short, the whole is so designed that, when completed, the equal will not be found in any other medical school in the Dominion.'"

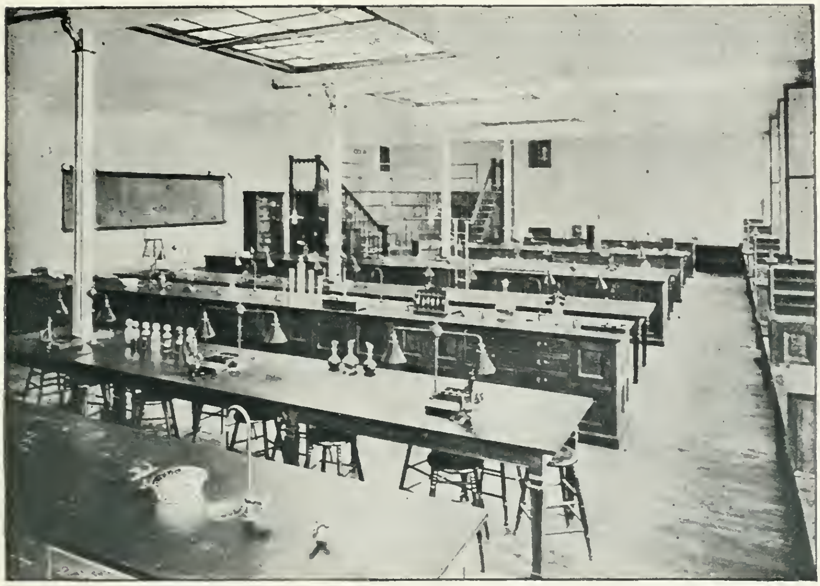
XIX.

EXTENSION OF 1885.

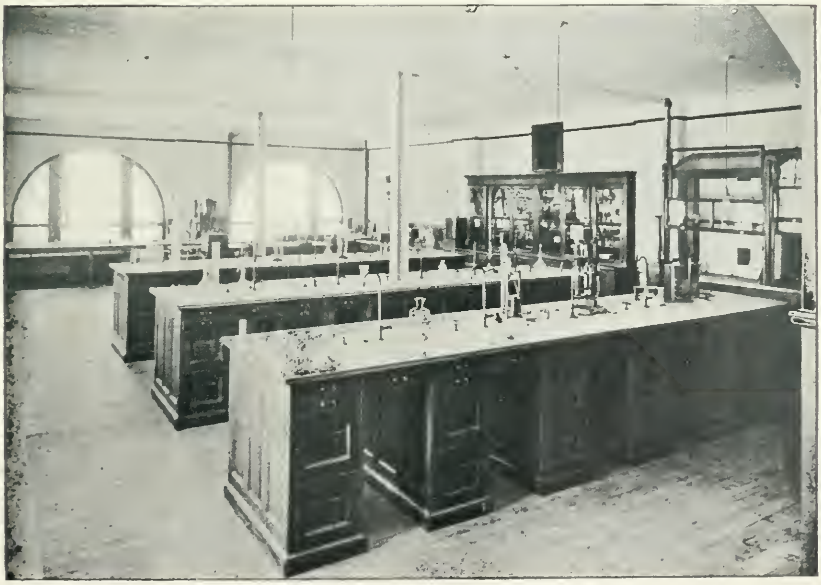
Reprinted from the *Canada Medical and Surgical Journal*, June, 1885, describing the extension of 1885.

THE NEW BUILDINGS OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

We are quite sure our readers will be pleased to hear that the continually increasing success of the Medical Faculty of McGill University during the past few years has been so great as to render the large building at present occupied by them altogether too small for teaching purposes. In consequence, the Faculty have now in course of construction an annex larger than the present building, which will greatly increase the facilities for all the classes. As it is now the Faculty is much larger than any other medical college in the Dominion. When the annex is completed and the extensive alterations contemplated in the old building have been made, it will be one of the



Laboratory of Pathology and Bacteriology, 1901.



In the Laboratory of Hygiene, 1901.

largest and most complete on this continent. A student of former years will be unable to recognize the inside of the building in which he studied, as the only rooms existing then and now are the library and museum, and these too have been added to. Some idea of the size of the whole structure, complete, can be formed from the fact that the main hall on the first floor will be 136 feet long with a room 28 feet long at the end of it, giving a total length from front to rear of 164 feet. Accompanying this will be found a plan as taken from the College Calendar.

For those interested we give a description of the entire building:—

Ground floor: The library, which is a very extensive one, containing over 10,000 volumes, will now consist of two rooms, the additional room being 30 x 22, and opening off the present one. On the opposite side of the hall is the museum, which will now be connected with an extensive additional room by a small chamber, in this way almost doubling its present capacity. In the latter the curator will have facilities for his special work. Continuing along the main hall, the second door we come to on the left will be the entrance to the Pharmacological Laboratory. This room is to be specially fitted up for demonstrating experimentally the action of drugs, as well as for giving courses on practical pharmacy. On the opposite side of the hall is the students' reading room, which is to be comfortably fitted up. Next to the reading room is the private room of the Professor of Physiology. This is chiefly for the purposes of the experimental work of the professor himself. Here also will be kept the valuable apparatus of the department, which has been extensively added to, and is now thoroughly efficient. This opens into the Physiological Laboratory which is the next room to the right. Here the students will themselves take an active part in the physiological work, just as in the adjoining Chemical Laboratory they study chemistry practically. The Chemical Laboratory will have accommodation for 75 students, all engaged in the practical work of this subject. Here every convenience is provided for enabling the student to pursue this special work. Opening off the laboratory is the "balance room" and private room of the Professor of Chemistry. On the opposite side of the main hall is the large lecture theatre for the classes on these two branches. This room is hexagonal in shape and its widest part measures 76 feet. It is lighted by a skylight and three windows to the rear of the students which also serve admirably for ventilating purposes. It will seat comfortably 275 students. Beneath the higher seats are four rooms, each 8 feet high and ten feet wide. The Professor of Therapeutics will occupy the first two rooms, one of which will be for the convenient performance of his duties as Registrar. The Professor of Chemistry will use the other two rooms for physical apparatus and also for private experimental work.

Second Storey: Opposite the main staircase is the dissecting room. This will be now 72 feet long, and will be provided with 20 tables. The room will be splendidly lighted by daylight with two skylights, as well as windows from three points of the compass; and at night there will be both electric lights and gas. Opening off the dissecting room is the bone room. This will have a large table in its centre and seats, will be well supplied with bones, and will be a convenient place for the study of osteology. Opening off the bone room will be rooms for the demonstrator and his assistants.

Turning sharp to the left after ascending the main stairway, the first door we come to is the entrance to a small lecture room or theatre for demonstrating purposes. This will be used for pathological and other demonstrations to at least 50 students at a time. Close to the door of this theatre is one of the entrances to the Histological Laboratory, the other entrance being to the right of the head of the stairs. This laboratory will have, commencing about its centre, a stage two feet six inches high, reached by three or four steps on which will be two tables extending across the room. Behind this will be another of a similar height and arranged in the same manner. There will also be four tables ten feet long with microscopes on the floor level, the tables on the stage being provided with three or four microscopes. This arrangement of stages is to prevent students standing in front of the tables from obstructing the light of those using the microscopes. This laboratory will be furnished with thirty microscopes, also microtomes and other apparatus for practical work.

In the annex on this flat will be a large lecture room, capable of seating comfortably 300 students. Its measurements are 56 by 46. This theatre will be utilized as the anatomy lecture room besides other purposes. Separate entrances are provided for the students. The Professor of Anatomy will have his room opening off this theatre. Beneath the higher seats will be rooms eight feet high and twelve wide at narrowest part.

THE

MONTREAL MEDICAL JOURNAL.

Vol. XXXI. SEPTEMBER, 1902. No. 9.

Original Communications.

PRESIDENTIAL ADDRESS.

BY

Francis J. Shepherd, M.D.

Delivered before the Canadian Medical Association, Montreal, September 16th, 1902.

It has been said by a well-known scientific authority that bores must be classed among the enemies of the human race, and perhaps one of the most objectionable species of this large genus is the Presidential Address Bore. One of the "privileges" of the President of this Association is to deliver the Annual Address; he is the victim of circumstances. I trust, however, that what I say will not prove altogether uninteresting—at any rate if you are bored it will not be for long, for my address will have one thing to recommend it—that is, brevity.

First, let me welcome you all heartily to our city; I hope your visit will be of value to you, not only from a professional standpoint, but also from a social one. The great advantage of these meetings is not so much what one learns from the papers and discussions of the sections, but from that personal intercourse to which such occasions give opportunity—the interchange of thoughts and ideas and the estimating of our fellow-members, not only as surgeons and physicians, but as men, who, like ourselves, are doing their best in this life in trying to solve the difficult problems which are continually confronting us all. At these meetings many friendships are made which last a lifetime. As Horace says, "There is no pleasure equal to that given by a pleasant friend," and the members of the profession from the extreme limits of this great Dominion, meet and are brought together under the most favourable circumstances. Teachers meet their old pupils, and students their old companions, and, perhaps, rivals. The mystery and clouds which enveloped the old professor, who was looked upon with awe and from a distance, are now dispelled and reveal a human being even as themselves. The man who is only known by his books, or by what he has written in the leading journals, and whose opinion, perhaps, has been regarded as almost infallible, often appears as a very ordinary individual; others again, of whom we have never heard, impress us much by their force of character and the intimate knowledge of their profession which they possess. The man from the east who is slow to adopt new ideas and new methods, is rendered almost breathless by the procedures, apparently most successful, of his professional brother from the west. One reacts on the other; the pace of one is hastened and that of the other retarded, to the benefit of both.

This certainly is a great opportunity for all of us to interchange ideas, and such meetings tend to weld the profession together and to obliterate sectional jealousies. It is well sometimes to remember that we are all Canadians, as well as medical men, and that our interests are those of the Empire as well as of Canada. This community of interest will be much strengthened and accentuated if the Dominion Registration Bill, which has, during the last session, been passed by the Dominion Parliament, be, with the consent of the various provinces, put into force.

Dr. Roddick's Bill.

Ever since I commenced the study of medicine in 1869, I have heard about a Dominion Registration Bill. For years, at every meeting of this Association it was discussed. Several bills were drawn up and such men as the Hon. Dr. Parker, of Halifax, Sir Chas. Tupper, Dr. R. P. Howard and others, were engaged in trying to frame a bill which would be acceptable to all parties, but all in vain; failure after failure resulted, and for a time it was given up in despair. At last a champion arose who valiantly attacked and solved the problem. You all know him—Dr. T. G. Roddick. I congratulate him on the courage, persistency, skill and ability with which he has pushed through his Medical Bill in the face of many obstacles. It remains now for the different provinces to pass a short act by which the Dominion Bill can be worked. The Dominion is ready for the carrying out of the provisions of the Bill as soon as the provinces agree to it, and I trust that no one province will decline to act and so selfishly render the Dominion Bill inoperative. The first step has been taken and the first barrier overcome; let us hope now that the other obstacles will soon be removed, and then—a man who has fulfilled all the provincial requirements and passed before the Dominion Board will have the whole Empire ready for him to practice in and all the public services at his disposal. Why, I know of several cases where men, serving as surgeons during the late war in South Africa, could not attend Imperial troops because, forsooth, they had not a license to practice in Great Britain, nor could they ever hope to join the Army and Navy Medical Services.

Such a condition of things is a reflection on our citizenship and a slur on our Imperialism. It only remains for the provinces to remove the disability by accepting the Roddick Bill and so enlarging our opportunities by throwing open practically the whole British Empire to our medical men.

Medical Progress.

It would be useless for me to attempt to describe to you the great advances that have of late been made in medical science, for you are already very familiar with them. For some time it was thought that surgery was outstripping medicine in the race for knowledge, and many regions which were in the exclusive possession of the physician were rudely annexed by the surgeon, and even yet the surgeon is not satisfied, but like the horseleech's daughter, calls for more. Only this year that disease so intimately associated with the physician and named after one—Bright'sDisease—has been treated surgically and with some success. The surgeon is still struggling for the possession of this, up until now, distinctly medical disease which the physician is not so willing to part with, waiting with his usual caution for more light.

However, medicine has not been standing still, but has made many advances and has done most magnificent work in various departments. It has fought for this knowledge with great courage and has left on the battlefield not a few heroes, who have fallen bravely fighting with their faces to the foe. I refer especially to the magnificent work done in Cuba in regard to the discovery of causes of infection of Yellow Fever. And what is the result? Why, a region which has been for centuries a pest-house at certain periods of the year, has become a veritable sanitarium. Yellow Fever has been abolished from Cuba, because it has been proved beyond doubt by experiment that the mosquito conveyed the disease, and that if the breeding places of the mosquito were abolished and the fever patient was isolated so that mosquitos could not bite him, they could not convey the disease to others. The chief honour and praise in these investigations must be awarded to Walter Reed, Carroll and Agramonte. Good work is still going on in the investigation of malarial fevers and it is the hope of all of us that this troublesome and widespread disease may in time be abolished. It is useless by ordinary means to hope to destroy or rather exterminate the mosquito, but, by removing stagnant water and covering their breeding places with coal oil, and sleeping at night under nettings, the disease may be in many cases avoided; but, until we can discover some such means as inoculating the mosquito with a fatal disease and so exterminate him, malaria will be more or less always with us, especially in the tropics.

We have all heard much of the white plague (tuberculosis) in the lay and medical press, how it is propagated, how it may be prevented, how it may be cured; the world has become rather hysterical on the subject, and, no doubt, good will come of it all. But there is another plague, stalking boldly in our midst, and flaunting its banners with the greatest insolence, carrying off its victims by thousands, and disabling and disfiguring thousands of others, the innocent and the guilty with a remarkable impartiality, and yet no notice is taken of it; it is silently, ignored. We must not discuss it or speak of it, or suggest remedies for its extermination; like many things in the Pacific Islands, it is tabooed. We take the utmost care to prevent people catching measles, scarlet fever, chicken-pox, etc., and allow syphilis to come and go amongst us unnoticed and apparently uncared for. It is a most remarkable state of affairs. A poor leper, from whom the chance of taking the disease is small, is shunned, banished and isolated, whilst a syphilitic is allowed to spread the disease at will, without restraint. It is appalling to think of the risk we all run; the innocent suffer often more than the guilty. Because the disease is now a sexual one, although it was not so originally, we must not control it or arrest its spread, or endeavour in any way to ameliorate the condition of those unfortunates who suffer from it. Our neighbours across the line will not allow immigrants with favus to land, but welcome the syphilitic if he have a few dollars in his pocket. Is it not most illogical to build hospitals in order to protect people from measles and scarlet fever, and to allow syphilis to spread itself unchallenged ? It is time that the profession took this subject up and educated the public to a better knowledge of sanitary laws.

Modern Laboratory Teaching.

In the wonderful developments of all branches of science, medicine has not lagged behind and the world generally is becoming much interested in the many discoveries in medical science which have lately taken place. Money is being left and donated in large amounts to stimulate still further exertions in the line of research; special sums are being set aside for the experimental study of the origin and cure of certain diseases, such as carcinoma, tuberculosis, etc., and immense amounts have quite recently been given by the multi-millionaires for the erection and maintenance of splendid laboratories which are intended not so much for the teaching of students as the encouragement of research work.

The medical school is developing into a huge system of laboratories to the exclusion of the lecture, and even the hospital; for the day has not got any longer and laboratory work takes time. We must not forget, however, that laboratories, triumphs of architecture though they be and equipped as they are with all the most modern scientific apparatus, will not themselves produce men of science, they will only give them the opportunity of developing. Such giants as Pasteur, Lister, Koch and the great Virchow, who has lately passed away, were not produced by magnificent laboratories or splendid inducements of fellowships, etc., they made their opportunities and forced nature, by the power of their intellects, to give up to them her secrets; difficulties only stimulated them to put forth still further efforts. Such men are not found at will, but they are born like poets, only occasionally. To paraphrase Sir Thomas Browne—"They do most by laboratories who could do much without them, and he that chiefly owes himself unto himself is the substantial man."

One danger of this great multiplication of laboratories is that it induces men to pursue original investigation who have not the true scientific spirit, and who are utterly unfit for such work. They frequently collect and publish a mass of useless and undigested material and therefrom draw inaccurate conclusions. All this will not redound to the credit of medical science. However, we must hope for the best, knowing a large amount of good work will be done and many valuable discoveries made. I do not wish it to be inferred that I am opposed to the addition of modern laboratories to our medical schools, they are all necessary, but they must not supplant other work quite as important to a man who wishes to become a practicing physician or surgeon. Again, we must remember that the Millenium will not be brought about by laboratories, nor will all scientific problems be solved by them.

There is one laboratory which is not so much frequented now as when I was a student, I refer to the hospital wards. Students, while perhaps more scientific—I say scientific because nowadays every one who spends much of his time in a laboratory learning the use of all kinds of modern apparatus, including our old friend the microscope, is regarded as having a scientific training—I may say that students while perhaps being more scientific (microscopical and mechanical), have not that intimate personal knowledge of disease which continued observation at the bedside gives them, so that when started in some out-of-the-way place without their scientific machinery, they are like fish out of water. It may soon be that they will not be able to diagnose a fracture without the X-rays, a suppuration without an elaborate system of cultures of the various cocci, typhoid fever without the Widal test, diphtheria without finding the Klebs-Loeffler bacillus, tuberculosis without getting bacilli in the sputum, and so on without end. Students are not taught to observe so accurately the evident symptoms of disease, and as I say, are becoming mere mechanics who need an armamentarium (which only a great hospital or university can possess) to make an accurate diagnosis of an ordinary disease, the higher and more intellectual means of drawing conclusions by inductive reasoning are almost neglected.

This mode of education may do for the few, but for the many who have to practice away from centres, it is not the best method. The reason of it all is that most colleges are now managed by laboratory men who are specialists from the start and who have never practiced medicine, and so never have appreciated the needs of students who, when they graduate, will have to earn their living by attending sick people. The practitioners who are connected with the colleges are too busy, and not living on the premises, so to speak, give up the management gladly to those having more time and having new ideas which they wish to have carried out, especially on laboratory lines. They are eager for original investigations and encourage their men to do such and such a piece of work, forgetting that these men have first to learn the rudiments of a profession by which they have in future to make their living, and that the laboratory work is only a part of their training.

In a recent address delivered at the last meeting of the British Medical Association, Dr. William Japp Sinclair says:—"It was the devotion of the gifts of genius, of the highest intellectual endowment, to clinical investigations, which lent dignity to the labours of former generations of physicians and surgeons, and made their counsels fruitful in conferring permanent benefit on humanity. Enlightened and patient industry, and success in observation and treatment of disease, were long and tedious, but the only sure way to professional distinction and honour. But now, since the advent of the modern development of pathology, and especially of bacteriology, the unknown is accepted as magnificent by the whole medical profession, and a certain distinction can be achieved without much talent or industry; the microtome and the cultivation tube (though work connected with them often resembles a sad mechanic exercise), have provided a royal road for men into fields of clinical work they have not known how to cultivate. They have shirked the apprenticeship to clinical medicine, yet claim the consideration and emoluments due to the skilled and experienced journeyman."

Now hospital training is most essential to a true knowledge of disease and continual observation at the bedside with good tutorial instruction is a more important factor in the education of a medical man than the best and most complete knowledge of all the bacterial forms. How to properly examine a patient, how to question him so as to get all the salient points of his illness, how to observe his deviation from the normal in posture, color, expression and conduct—how to examine all his excretions and to tell how they differ from those in health; observe the character of the tongue and pulse, the breathing, etc., are essentials. After this the blood may be examined and other methods used to confirm or disprove our previously conceived idea of what the patient is suffering from. All this is much more important than a repetition of a series of experiments in laboratories and the culture of innumerable bacilli, common and rare. Mind you, I do not wish to disparage laboratory teaching, it is essential, but we can have too much of a good thing, and laboratories nowadays take up too much of the student's time in the latter years of his curriculum. The ordinary student should have a good working knowledge of laboratory methods, and this should be obtained chiefly during his first two years, but the refinements if insisted on will be acquired at the expense of some more useful and practical information, for the average student can only hold so much knowledge—it is hopeless to attempt to put a quart measure into a pint pot.

I would suggest that among students only a selected few be made use of for research work and that the average man be not freighted with too much laboratory ballast, but that room be left for other kinds of cargo, the use of which may prove of great value in the voyage through life. Post-graduate medical research work should also be encouraged by every university and opportunities given to every suitable person to continue lines of work for which he is most fitted.

In this connection I should like to read you an extract from an address delivered before the Medical Society at Oxford in 1895 by the late Professor Sir George Humphry, of Cambridge—"There is too great a mass of facts heaped on the memory and too little reflection on them, too great a straining after the practical and too little aspirations for the principles upon which good practice must be based. . . . . The sciences of physiology and histology have become, and those of pathology and anatomy are becoming, more separated from medicine, delegated to special teachers and special examiners—doubtless to the advantage and width of scope of those sciences and to the greater knowledge of them, but I fear there is hereby engendered a tendency to take the student too far afield. . . . . It is apt to lead too much to meandering in altitudes, too little to straight going upon *terra firma*, too much to pride and obstrusiveness of supposed higher knowledge, too little to reasoning and too little to power of reasoning upon simple data, and too little to that sort of reasoning which constitutes the basis of " Common Sense." The scientific and the practical, in short, become too much separated; what is needed is a greater regard to that connection between the two which should be maintained through the whole period of study."

SPECIALISM.

Another tendency in medical education is specialism. In some universities they are advocating allowing men to graduate in special lines, such as ophthalmology, dermatology, medicine, surgery, gynæcology, etc. This seems to me to be most pernicious, tending to develop much narrowness and also to exaggerate the importance of certain specialties and the public will suffer accordingly. Nowadays, even the most advanced are agreed on the importance of acquiring the rudiments and learning the principles of medicine and surgery and to practice them before commencing the study of any specialty. I do not say that the study of specialties such as otology, ophthalmology, gynæcology, and even dermatology should be neglected—on the contrary we should study them all—but in their relation to and bearing on general medicine and surgery, we should have a good working knowledge of each, but an excess of time should not be devoted to any one. A year or two of hospital work followed by some experience in general practice should be managed by any one who wishes to become a broad-minded specialist. In this way he gets a wider grasp of medicine and is less liable afterwards, when he gravitates to a specialty, to run in such narrow grooves.

It is the fashion now for men to go into medicine purposely to become specialists, not that they have any particular aptitude or leaning towards their special choice, but because the opportunities for making money are greater and their time will be their own—they only learn enough medicine and surgery to qualify for a degree. Such a training, although it may be a financial success, will tend to bring the practice of medicine down to a mere trade and the higher and nobler instincts which ought to stimulate a professional man will be no more seen amongst us.

QUACKERY.

I had intended touching at length on the various quackeries which are now so rampant among the most civilized nations and amongst their most cultivated classes, but time warns me I must be brief. I refer to such things as Christian Science, Mental Science, Spiritualism, Vitapathy, Osteopathy and such like—but perhaps they have their uses in this rapid and restless age—they probably are a vent for people who would otherwise have to be confined in asylums at a great expense to the public. Could any individual write such a lot of stuff as the following without there being a suspicion of insanity in the case? "If I believe in the power of disease, my thought atmosphere could not heal a patient. Disease has no power of its own but only as much power as our ignorance concedes to it. Disease is ignorance, intelligence is cure. Disease is but a negation of the ubiquitous life principle. This life principle has taken entire possession of me and my thoughts, I live in it. I am it." Such stuff as this, *ad infinitum*, is read and believed in by thousands—believed in but not understood. Education will not abolish belief in quacks and quackery. I wrote an article on quackery many years ago, which was published in the Popular Science Monthly, and I closed with the following quotation, which seems appropriate on the present occasion:—"The final though distant extinction of quackery is to be hoped for. It forms a fragment of that final triumph of reason and virtue which is the secret consolation of every philanthropist."

It is partly due to the profession itself that quackery flourishes. So many men who are unfit for the profession enter it and look on it as a business to make money, honestly perhaps, if possible, but to make it even if the credulity of the public is drawn on. Many of the doctors who write to papers like the "Alkaline Clinic," the "Medical Short-cut" and others of such a character, have a most misty idea of their profession and apparently are ignorant enough to deceive themselves as well as the public. I fancy they practice all the pathys, —one man from Texas asks the editor if he has anything that is a "dead shot" for eczema, another asks what is the most 'up-to-date scientific caper" for goitre, and so on; one specimen of sputum from an old lady, which was sent to the editor for examination, contained tubercle bacilli, diplococci, pneumo-bacilli, saprophytes and pus cells. Another patient, from the writer's description of her case, is diagnosed as having an extra vulnerability and an extra colony of microbes in her mouth. Such is the literature many feed upon, always looking for tips and sure cures, never accurately diagnosing the disease and always changing treatment. Is it any wonder that quacks flourish?

It is a curious thing, however, that our medical laws seem unable to cope with quacks, but, if a man who has had a regular training has not obtained his license, he is immediately hauled up and fined.

THE KING'S ILLNESS.

I fear I have trespassed on your time long enough, and I must bring this rather disconnected address to a close. I cannot, however, close without referring to the comparatively recent serious illness of our beloved Sovereign. The result in his case is most satisfactory and is a credit to modern surgery ; let all honour be given to the able and wise physicians and surgeons who directed his case. The rewards of the medical profession are not many, nor are they of the highest grade, but in the late award of honours medical men were not forgotten, and those in closest attendance on the King received their share. The responsibilities attaching to the medical attendants were more than usual, and very much depended on their advice as to the most proper and safest procedure. The proper path was chosen and for the time they are praised beyond measure, but unfortunately medical favours are soon forgotten.

> "Three faces the Phisition hath;
> "First as an Angel he,
> "When he is sought; next when he helpes
> "A God he seems to be;
> "And best of all, when he hath made
> "The Sicke, diseased well
> "And asks his guerdon, then he seems
> "An oughly Fiend of Hell."

The future of the medical man, however, is bright, and his position in the State is advancing as the necessity for employing him for the solution of all hygienic and sanitary problems becomes evident. In the wars of the future the winning of battles will be of no avail or impossible without an efficient medical service and no government will be complete without a department of public health presided over by medical men.

To enable our profession to obtain the respect and consideration of the public, we must stand shoulder to shoulder, and be true to ourselves. We must act so that no one can point the finger of scorn at us. We must not coquette with anything that has even the appearance of quackery. We must work for the love of our profession, and not for the mere object of getting money. We must neglect no opportunities of meeting together and so increasing our knowledge and stimulating our desire for knowledge. Above all, we must see that in the future none but men of the highest character, and who have had a proper preliminary training be allowed to enter into the profession of medicine.

OBITUARY.

Since we last met we have lost several valuable members; two especially will be missed, namely, Wyatt G. Johnston, of Montreal, and Wm. S. Muir, of Truro. Dr. Johnston, one might say, died on the battlefield, for he succumbed to sepsis contracted in his ordinary work. He had just been appointed the Professor of Hygiene and State Medicine in McGill University, and a long and successful occupation of the chair was hoped for. He had done much original work already as assistant professor, and in pathology he had made a world-wide reputation. Wyatt Johnston was in some respects a genius—he had the modesty, great originality and capacity for work, which distinguishes such men. He was, if anything, too fertile in ideas, and had so many ventures on the sea of experiment, that some of them necessarily came to grief; not because they were Utopian or impracticable, but because there was not time to work them out. At the Montreal General Hospital he had the confidence and love of his colleagues and his opinion was final on a pathological question. As an expert in the coroner's court he was looked upon as a safe authority and his evidence was never prejudicial and partisan, but was, as scientific evidence ought to be, impartial. He much impressed judges and lawyers with his honesty, sincerity and accurateness. We only occasionally find such men, but in their short lives they often accomplish more than many others who have exceeded the prescribed threescore years and ten.

William Scott Muir has also gone from amongst us. His cheerful countenance and portly form we miss here to-day; he was one who had for many years past regularly attended these meetings, and by his genial disposition and practical common sense endeared himself to all with whom he came in contact. He was a man of affairs and took the greatest interest in everything pertaining to the advancement of the profession; he was always wise in counsel and in scientific discussion had the faculty of going to the root of the matter and stripping the subject of unnecessary accessories. He was an able practitioner and much beloved by his patients. He gained their confidence by his transparent honesty and was always welcomed by his colleagues wherever he went and always found friends. He was a distinct personality and one the medical profession can ill afford to lose—his works will follow him.

Dr. Brunelle, surgeon of the Hotel Dieu Hospital, has also been suddenly removed from among us. He was an able surgeon and teacher, and will be much missed by his colleagues by whom he was held in the highest regard.

CHAUVINISM* IN MEDICINE.

THE ADDRESS IN MEDICINE, CANADIAN MEDICAL ASSOCIATION, MONTREAL, SEPT. 17TH, 1902.

BY

WILLIAM OSLER, M.D., F.R.S.,

Professor of Medicine, Johns Hopkins Hospital, Baltimore.

A rare and precious gift is the Art of Detachment, by which a man may so separate himself from a life-long environment as to take a panoramic view of the conditions under which he has lived and moved, and that frees him from Plato's den long enough to see the realities as they really are, the shadows as they appear. Could a physician attain to such an art he would find in the state of his profession a theme calling as well for the exercise of the highest faculties of description and imagination as for the deepest philosophic insight. With wisdom of the den only and of my fellow-prisoners, such a task is beyond my ambition and my powers, but to emphasize only the subject that I wish to bring home to your hearts I must first refer to certain distinctive features of our profession:—

I. FOUR GREAT FEATURES OF THE GUILD.

Its noble ancestry.—Like everything else that is good and durable in this world, modern medicine is a product of the Greek intellect, and had its origin when that wonderful people created positive or rational science, and no small credit is due to the physicians who, as Professor Gomperz remarks (in his brilliant chapter "On the Age of Enlightenment," *Greek Thinkers,* Vol. 1), very early brought to bear the spirit of criticism on the arbitrary and superstitious views of the phenomena of life. If science was ever to acquire "steady and accurate habits instead of losing itself in a maze of phantasies, it must be by quiet methodical research." "It is the undying glory of the school of Cos that it introduced this innovation into the domain of its Art, and thus exercised the most beneficial influence on the whole intellectual life of mankind. Fiction to the right ! Reality to the left ! was the battle cry of this school in the war it was the first to wage against the excesses and defects of the nature philosophy" (Gomperz). The critical sense and skeptical attitude of the Hippocratic school laid the foundations of modern medicine on broad lines, and we owe to it: *first,* the emancipation of medicine from the shackles of priestcraft and of caste; *secondly,* the conception of medicine as an art based on accurate observation, and as a science, an integral part of the science of man and of nature ; *thirdly,* the high moral ideals, expressed in that most "memorable of human documents" (Gomperz), the Hippocratic oath ; and *fourthly,* the conception and realization of medicine as the profession of a cultivated gentleman.* No other profession can boast of the same unbroken continuity of methods and of ideals. We may indeed be justly proud of our apostolic succession. Schools and systems have flourished and gone, schools which have swayed for generations the thought of our guild, and systems that have died before their founders; the philosophies of one age have become the absurdities of the next, and the foolishness of yesterday has become the wisdom of to-morrow; through long ages which were slowly learning what we are hurrying to forget; amid all the changes and chances of twenty-five centuries, the profession has never lacked men who have lived up to these Greek ideals. They were those of Galen and of Aretæus, of the men of the Alexandrian and Byzantine schools, of the best of the Arabians, of the men of the Renaissance, and they are ours to-day.

---

* Definition : A narrow, illiberal spirit in matters national, provincial, collegiate or personal.

A second distinctive feature is the *remarkable solidarity.* Of no other profession is the word universal applicable in the same sense. The celebrated phrase used of the Catholic Church is in truth much more appropriate when applied to medicine. It is not the prevalence of disease or the existence everywhere of special groups of men to treat it that betokens this solidarity, but it is the identity throughout the civilized world of our ambitions, our methods and our work. To wrest from nature the secrets which have perplexed philosophers in all ages, to track to their sources the causes of disease, to correlate the vast stores of knowledge, that they may be quickly available for the prevention and cure of disease—these are our ambitions. To carefully observe the phenomena of life in all its phases, normal and perverted, to make perfect that most difficult of all arts, the art of observation, to call to aid the science of experimentation, to cultivate the reasoning faculty, so as to be able to know the true from the false—these are our methods. To prevent disease, to relieve suffering and to heal the sick—this is our work. The profession in truth is a sort of guild or brotherhood, any member of which can take up his calling in any part of the world and find brethren whose language and methods and whose aims and ways are identical with his own.

---

* Nowhere in literature do we have such a charming picture illustrating the position of a cultivated physician in society as that given in Plato's Dialogues of Eryximachus, himself the son of a physician, Acumenus. In that most brilliant age the physician was the companion and friend, and in intellectual intercourse the peer of its choicest spirits.

Thirdly, *its progressive character.*—Based on science, medicine has followed and partaken of its fortunes, so that in the great awakening which has made the nineteenth memorable among centuries, the profession received a quickening impulse more powerful than at any period in its history. With the sole exception of the mechanical sciences, no other department of human knowledge has undergone such a profound change —a change so profound that we who have grown up in it have but slight appreciation of its momentous character. And not only in what has been actually accomplished in unravelling the causes of disease, in perfecting methods of prevention and in wholesale relief of suffering, but also in the unloading of old formulæ and in the substitution of the scientific spirit of free enquiry for cast-iron dogmas we see a promise of still greater achievement and of a more glorious future.

And lastly, the profession of medicine is distinguished from all others by *its singular beneficience.* It alone does the work of charity in a Jovian or God-like way, dispensing with free hand truly Promethean gifts. There are those who listen to me who have seen three of the most benign endowments granted to the race since the great Titan stole fire from the heavens. Search the scriptures of human achievement and you cannot parallel in beneficience Anæsthesia, Sanitation, with all that it includes, and Asepsis—a short half-century's contribution towards the practical solution of the problems of human suffering, regarded as eternal and insoluble. We form almost a monopoly or trust in this business. Nobody else comes into active competition with us, certainly not the other learned professions which continue along the old lines. Every few years sees some new conquest, so that we have ceased to wonder. The work of half-a-dozen men, headed by Laveran, has made waste places of the earth habitable and the wilderness to blossom as the rose. The work of Walter Reed and his associates will probably make Yellow Fever as scarce in the Spanish Main as is typhus fever with us. There seems to be no limit to the possibilities of scientific medicine, and while philanthropists are turning to it as to the hope of humanity, philosophers see, as in some far-off vision, a science from which may come in the prophetic words of the Son of Sirach, " Peace over all the earth."

Never has the outlook for the profession been brighter. Everywhere the physician is better trained and better equipped than he was twenty-five years ago. Disease is understood more thoroughly, studied more carefully and treated more skilfully. The average sum of human suffering has been reduced in a way to make the angels rejoice. Diseases familiar to our fathers and grandfathers have disappeared, the death rate from others is falling to the vanishing point, and public health measures have lessened the sorrows and brightened the lives of millions. The vagaries and whims, lay and medical, may neither have diminished in number nor lessened in their capacity to distress the faint hearted who do not appreciate that to the end of time people must imagine vain things, but in the light of the colossal advances of the past fifty years, what are they but flies on the wheels of progress?

So vast, however, and composite has the profession become, that the physiological separation, in which dependent parts are fitly joined together, tends to become pathological, and while some parts suffer necrosis and degeneration, others, passing the normal limits, become disfiguring and dangerous outgrowths on the body medical. The dangers and evils which threaten harmony among the units, are internal, not external. And yet, more than in any other profession, owing to the circumstances of which I have spoken, is complete organic unity possible. Of the many hindrances in the way time would fail me to speak, but there is one aspect of the question to which I would direct your attention in the hope that I may speak a word in season.

Perhaps no sin so easily besets us as a sense of self-satisfied superiority to others. It cannot always be called pride, that master sin, but more often it is an attitude of mind which either leads to bigotry and prejudice or to such a vaunting conceit in the truth of one's own beliefs and positions, that there is no room for tolerance of ways and thoughts which are not as ours are. To avoid some smirch of this vice is beyond human power; we are all dipped in it, some lightly, others deeply grained. Partaking of the nature of uncharitableness, it has not the intensity of envy, hatred and malice, but it shades off in fine degrees from them. It may be a perfectly harmless, even an amusing trait in both nations and individuals, and so well was it depicted by MM. Cogniard in their play, *La Cocarde Tricolore,* 1831, one character in which was the young recruit Chauvin, that the name Chauvinism has become a by-word, expressing a bigoted, intolerant spirit.* The significance of the word has been widened, and it may be used as a synonym for a certain type of nationalism, for a narrow provincialism or for a petty parochialism. It does not express the blatant loudness of Jingoism, which is of the tongue, while Chauvinism is a condition of mind, an aspect of character much more subtle and dangerous. The one is more apt to be found in the educated classes, while the other is pandemic in the fool multitude—"that numerous piece of monstrosity which, taken asunder, seem men and reasonable creatures of God, but confused together, make but one great beast, and a monstrosity more prodigious than Hydra" (Religio Medici). Wherever found, and in whatever form, Chauvinism is a great enemy of progress and of peace and concord among the units. I have not the time, nor had I, have I the ability to portray this failing in all its varieties; I can but touch upon some of its aspects, national, provincial and parochial.

---

* It is by no means easy to see, after reading the play, how the name could have arisen. The nationalism displayed is of a most harmless type. In the sense here employed it has been used by standard writers, as for example, Huxley.

II. NATIONALISM IN MEDICINE.

Nationalism has been the great curse of humanity. In no other shape has the Demon of Ignorance assumed more hideous proportions; to no other obsession do we yield ourselves more readily. For whom do the Hosannas ring higher than for the successful butcher of tens of thousands of poor fellows who have been made to pass through the fire to this Moloch of nationalism? A vice of the blood, of the plasm rather, it runs riot in the race, and rages to-day as of yore in spite of the precepts of religion and the practice of democracy. Nor is there any hope of change; the pulpit is dumb, the press fans the flames, literature panders to it and the people love to have it so. Not that all aspects of nationalism are bad. Breathes there a man with soul so dead that it does not glow at the thought of what the men of his blood have done and suffered to make his country what it is? There is room, plenty of room, for proper pride of land and birth. What I inveigh against is a cursed spirit of intolerance, conceived in distrust and bred in ignorance, that makes the mental attitude perennially antagonistic, even bitterly antagonistic to everything foreign, that subordinates everywhere the race to the nation, forgetting the higher claims of human brotherhood.

While medicine is everywhere tinctured with national characteristics, the wider aspects of the profession, to which I have alluded—our common lineage and the community of interests—should always save us from the more vicious aspects of this sin, if it cannot prevent it altogether. And yet I cannot say, as I wish I could, that we are wholly free from this form of Chauvinism. Can we say, as English, French, German or American physicians, that our culture is always cosmopolitan, not national, that our attitude of mind is always as frankly open and friendly to the French as to the English, to the American as to the German, and that we are free at all times and in all places from prejudice, at all times free from a self-satisfied feeling of superiority the one over the other? There has been of late years a closer union of the profession of the different countries through the International Congress and through the international meetings of the special societies; but this is not enough, and the hostile attitude has by no means disappeared. Ignorance is at the root. When a man talks slightingly of the position and work of his profession in any country, or when a teacher tells you that he fails to find inspiration in the work of his foreign colleagues, in the words of the Arabian proverb—he is a fool, shun him! Full knowledge, which alone disperses the mists of ignorance, can only be obtained by travel or by a thorough acquaintance with the literature of the different countries. Personal, first-hand intercourse with men of different lands, when the mind is young and plastic, is the best vaccination against the disease. The man who has sat at the feet of Virchow, or has listened to Traube, or Helmotz, or Cohnheim, can never look with unfriendly eyes at German medicine or German methods. Who ever met with an English or American pupil of Louis or of Charcot, who did not love French medicine, if not for its own sake, for the reverence he bore his great master ? Let our young men, particularly those who aspire to teaching positions, go abroad. They can find at home laboratories and hospitals as well equipped as any in the world, but they may find abroad more than they knew they sought—widened sympathies, heightened ideals and something perhaps of a *Welt-cultur* which will remain through life as the best protection against the vice of nationalism.

Next to a personal knowledge of men, a knowledge of the literature of the profession of different countries will do much to counteract intolerance and Chauvinism. The great works in the department of medicine in which a man is interested, are not so many that he cannot know their contents, though they be in three or four languages. Think of the impetus French medicine gave to the profession in the first half of the last century, of the debt we all owe to German science in the latter half, and of the lesson of the practical application by the English of sanitation and asepsis ! It is one of our chief glories and one of the unique features of the profession that no matter where the work is done in the world, if of any value it is quickly utilized. Nothing has contributed more to the denationalization of the profession of this continent than, on the one hand, the ready reception of the good men from the old countries who have cast in their lot with us, and, on the other, the influence of our young men who have returned from Europe with sympathies as wide as the profession itself. There is abroad among us a proper spirit of eclecticism, a willingness to take the good wherever found, that augurs well for the future. It helps a man immensely to be a bit of a hero-worshipper, and the stories of the lives of the masters of medicine do much to stimulate our ambition and rouse our sympathies. If the life and work of such men as Bichat and Laennec will not stir the blood of a young man and make him feel proud of France and of Frenchmen, he must be a dull and muddy mettled rascal. In reading the life of Hunter, of Jenner, who thinks of the nationality which is merged and lost in our interest in the man and in his work ? In the halcyon days of the Renaissance there was no nationalism in medicine, but a fine catholic spirit made great leaders like Vesalius, Eustachius, Stensen and others at home in every country in Europe. While this is impossible to-day, a great teacher of any country may have a world-wide audience in our journal literature, which has done so much to make medicine cosmopolitan.

III. PROVINCIALISM IN MEDICINE.

We may congratulate ourselves that the worst aspects of nationalism in medicine are disappearing before the broader culture and the more intimate knowledge brought by ever-increasing intercourse, yet conditions have favoured in English-speaking countries the growth of a very unpleasant sub-variety, which may be called provincialism or sectionalism. In one sense the profession of this continent is singularly homogeneous. A young man may be prepared for his medical course in Louisiana and enter McGill College, or he may enter Dalhousie College, Halifax, from the State of Oregon, and in either case he will not feel strange or among strangers so soon as he has got accustomed to his environment. In collegiate life there is a frequent interchange of teachers and professors between all parts of the country. To better his brains the scholar goes freely where he wishes—to Harvard, McGill, Yale, or Johns Hopkins; there are no restrictions. The various medical societies of the two countries are, without exception, open to the members of the profession at large. The President of the Association of American Physicians this year (Dr. James Stewart), is a resident of this city, which gave also last year, I believe, presidents to two of the special societies. The chief journals are supported by men of all sections. The text-books and manuals are everywhere in common; there is, in fact, a remarkable homogeneity in the English-speaking profession, not only on this Continent but throughout the world. Naturally, in widely scattered communities, sectionalism—a feeling or conviction that the part is greater than the whole—does exist, but it is diminishing, and one great function of the national associations is to foster a spirit of harmony and brotherhood among the scattered units of these broad lands. But we suffer sadly from a provincialism which has gradually enthralled us, and which sprang originally from an attempt to relieve conditions insupportable in themselves. I have praised the unity of the profession of this continent, in so many respects remarkable, and yet in another respect it is the most heterogeneous ever known. Democracy in full circle touches tyranny, and as Milton remarks, the greatest proclaimers of liberty may become its greatest engrossers (or enslavers). The tyranny of labour unions, of trusts and of an irresponsible press may bear as heavily on the people as imperialism in its worst form. And, strange irony of fate! the democracy of Provincial and State Boards has imposed in a few years a yoke more grevious than that which afflicts our brethren in Great Britain, which took generations to forge.

The delightful freedom of intercourse of which I spoke, while wide and generous, is limited to intellectual and social life, and on the practical side, not only are genial and courteous facilities lacking, but the bars of a rigid provincialism are put up, fencing each state as with a Chinese wall. In the Dominion of Canada there are eight portal entries to the profession, in the United States almost as many as there are States, in the United Kingdom nineteen, I believe, but in the latter the license of any one of these bodies entitled a man to registration anywhere in the kingdom. Democracy in full circle has reached on this hemisphere, a much worse condition than that in which the conservatism of many generations has entangled the profession of Great Britain. Upon the origin and growth of the Provincial and State Boards I do not propose to touch. The ideal has been reached so far as organization is concerned, when the profession elects its own Parliament, to which is committed the control of all matters relating to the license. The recognition, in some form, of this democratic principle, has been one of the great factors in elevating the standard of medical education, and in a majority of the States of the Union it has secured a minimum period of four years of study, and a State Examination for License to Practice. All this is as it should be. But it is high time that the profession realized the anomaly of eight boards in the Dominion and some scores in the United States. One can condone the iniquity in the latter country more readily than in this, in which the boards have existed for a longer period, and where there has been a greater uniformity in the medical curriculum. After all these years that a young man, a graduate of Toronto and a registered practitioner in Ontario, cannot practice in the Province of Quebec, his own country, without submitting to vexatious penalties of mind and pocket, or that a graduate from Montreal and a registered practitioner of this province cannot go to Manitoba, his own country again, and take up his life's work without additional payments and penalties, is, I maintain, an outrage; it is provincialism run riot. That this pestiferous condition should exist through the various provinces of this Dominion and so many States of the Union, illustrates what I have said of the tyranny of democracy and how great enslavers of liberty its chief proclaimers may be.

That the cure of this vicious state has to be sought in Dominion bills and National examining boards, indicates into what debasing depths of narrow provincialism we have sunk. The solution seems so simple, particularly in this country, with its uniformity of methods of teaching and length of curriculum. A generous spirit that will give to local laws a liberal interpretation, that limits its hostility to ignorance and viciousness, that has regard as much or more for the good of the guild as a whole as for the profession of any province—could such a spirit brood over the waters, the raging waves of discord would soon be stilled. With the attitude of mind of the general practitioner in each province rests the solution of the problem. Approach it in a friendly and gracious spirit and the difficulties which seem so hard will melt away. Approach it in a Chauvinistic mood, fully convinced that the superior and unparalled conditions of your province will be jeopardized by reciprocity or by federal legislation, and the present antiquated and disgraceful system must await for its removal the awakening of a younger and more intelligent generation.

It would ill become me to pass from this subject—familiar to me from my student days from the interest taken in it by that far-sighted and noble-minded man, Dr. Palmer Howard—it would ill become me, I say, not to pay a tribute of words to Dr. Roddick for the zeal and persistence with which he has laboured to promote union in the compound, comminuted fracture of the profession of this Dominion. My feeling on the subject of international, intercolonial and interprovincial registration is this—a man who presents evidence of proper training, who is a registered practitioner in his own country and who brings credentials of good standing at the time of departure, should be welcomed as a brother, treated as such in any country and registered upon payment of the usual fee. The ungenerous treatment of English physicians in Switzerland, France and Italy, and the chaotic state of internecine warfare existing on this Continent, indicates how far a miserable Chauvinism can corrupt the great and gracious ways which should characterize a liberal profession.

Though not germane to the subject, may I be allowed to refer to one other point in connection with the State Boards—a misunderstanding, I believe, of their functions. The profession asks that the man applying for admission to its ranks shall be of good character and fit to practice the science and art of medicine. The latter is easily ascertained if practical men have the place and the equipment for practical examinations. Many of the boards have not kept pace with the times, and the questions set too often show a lack of appreciation of modern methods. This has, perhaps, been unavoidable since, in the appointment of examiners, it has not always been possible to select experts. The truth is, that however well organized and equipped, the state boards cannot examine properly in the scientific branches, nor is there need to burden the students with additional examinations in anatomy, physiology and chemistry. The Provincial and State Boards have done a great work for medical education on this continent, which they would crown and extend by doing away at once with all theoretical examinations and limiting the tests for the license to a rigid practical examination in medicine, surgery and midwifery, in which all minor subjects could be included.

IV. PAROCHIALISM IN MEDICINE.

Of the parochial and more personal aspects of Chauvinism I hesitate to speak; all of us, unwittingly as a rule, illustrate its varieties. The conditions of life which round us and bound us, whether in town or country, in college or institution, give to the most liberal a smack of parochialism, just as surely as we catch the tie of tongue of the land in which we live. The dictum put into the mouth of Ulysses, "I am a part of all that I have met," expresses the truth of the influence upon us of the social environment, but it is not the whole truth, since the size of the parish, representing the number of points of contact, is of less moment than the mental fibre of the man. Who has not known lives of the greatest freshness and nobility hampered at every turn and bound in chains the most commonplace and sordid, lives which illustrate the liberty and freedom enjoyed by minds innocent and quiet, in spite of stone walls and iron bars. On the other hand, scan the history of progress in the profession, and men the most illiberal and narrow, reeking of the most pernicious type of Chauvinism, have been among the teachers and practitioners of the large cities and great medical centres; so true is it, that the mind is its own place and in itself can make a man independent of his environment.

There are shades and varieties which are by no means offensive. Many excellent features in a man's character may partake of its nature. What, for example, is more proper than the pride which we feel in our teachers, in the university from which we have graduated, in the hospital at which we have been trained? He is a "poor sort" who is free from such feelings, which only manifest a proper loyalty. But it easily degenerates into a base intolerance which looks with disdain on men of other schools and other ways. The pride, too, may be in inverse proportion to the justness of the claims. There is plenty of room for honest and friendly rivalry between schools and hospitals, only a blind Chauvinism puts a man into a hostile and intolerant attitude of mind at the mention of a name. Alumni and friends should remember that indiscriminate praise of institutions or men is apt to rouse the frame of mind illustrated by the ignorant Athenian who, so weary of hearing Aristides always called the Just, very gladly took up the oyster shell for his ostracism, and even asked Aristides himself, whom he did not know, to mark it.

A common type of collegiate Chauvinism is manifest in the narrow spirit too often displayed in filling appointments. The professoriate of the profession, the most mobile column of its great army, should be recruited with the most zealous regard to fitness, irrespective of local conditions that are apt to influence the selection. Inbreeding is as hurtful to colleges as to cattle. The interchange of men, particularly of young men, is most stimulating, and the complete emancipation of the chairs which has taken place in most of our universities should extend to the medical schools. Nothing, perhaps, has done more to place German medicine in the forefront to-day than a peripatetic professoriate, owing allegiance only to the profession at large, regardless of civic sometimes, indeed, of national limitations and restrictions. We acknowledge the principle in the case of the scientific chairs, and with increasing frequency act upon it, but an attempt to extend it to other chairs may be the signal for display of rank parochialism.

Another unpleasant manifestation of collegiate Chauvinism is the outcome, perhaps, of the very keen competition which at present exists in scientific circles. Instead of a generous appreciation of the work done in other places, there is a settled hostility and a narrowness of judgment but little in keeping with the true spirit of science. Worse still is the "lock and key" laboratory in which suspicion and distrust reign, and everyone is jealous and fearful lest the other should know of or find out about his work. Thank God ! this base and bastard spirit is not much seen, but it is about, and I would earnestly entreat any young man who unwittingly finds himself in a laboratory pervaded with this atmosphere, to get out ere the contagion sinks into his soul.

Chauvinism in the unit, in the general practitioner, is of much more interest and importance. It is amusing to read and hear of the passing of the family physician. There never was a time in our history in which he was so much in evidence, in which he was so prosperous, in which his prospects were so good or his power in the community more potent. The public has even begun to get sentimental over him! He still does the work; the consultants and the specialists do the talking and the writing—and take the fees! By the work, I mean that great mass of routine practice which brings the doctor into every household in the land and makes him, not alone the adviser, but the valued friend. He is the standard by which we are measured. What he is we are; and the estimate of the profession in the eyes of the public is their estimate of him. A well-trained sensible family doctor is one of the most valuable assets in a community, worth to-day, as in Homer's time, many another man. To make him efficient is our highest ambition as teachers, to save him from evil should be our constant care as a guild. I can only refer here to certain aspects in which he is apt to show a narrow Chauvinism hurtful to himself and to us.

In no single relation of life does the general practitioner show a more illiberal spirit than in the treatment of himself. I do not refer so much to careless habits of living, to lack of routine in work, or to failure to pay due attention to the business side of the profession—sins which so easily beset him—but I would speak of his failure to realize, first, the need of a life-long progressive personal training, and secondly, the danger lest in the stress of practice he sacrifice that most precious of all possessions, his mental independence. Medicine is a most difficult art to acquire. All the college can do is to teach the student principles, based on facts in science, and give him good methods of work. These simply start him in the right direction, they do not make him a good practitioner—that is his own affair. To master the art requires sustained effort, like the bird's flight which depends on the incessant action of the wings, but this sustained effort is so hard that many give up the struggle in despair. And yet it is only by persistent intelligent study of disease upon a methodical plan of examination that a man gradually learns to correlate his daily lessons with the facts of his previous experience and with that of his fellows, and so acquires clinical wisdom. Nowadays it is really not a hard matter for a well-trained man to keep abreast of the best work of the day. He need not be very scientific so long as he has a true appreciation of the dependence of his Art on Science, for, in a way, it is true that a good doctor may have practice and no theory, art and no science. To keep up a familiarity with the use of instruments of precision is an all-important help in his art, and I am profoundly convinced that as much space should be given to the clinical laboratory as to the dispensary. One great difficulty is that while waiting for the years to bring the inevitable yoke, a young fellow gets stale and loses that practised familiarity with technique which gives confidence. I wish the older practitioners would remember how important it is to encourage and utilize the young men who settle near them. In every large practice there are a dozen or more cases requiring skilled aid in the diagnosis, and this the general practitioner can have at hand. It is his duty, and failing to do so he acts in a most illiberal and unjust way to himself and to the profession at large. Not only may the older man, if he has soft arteries in his grey cortex, pick up many points from the young fellow, but there is much clinical wisdom afloat in each parish which is now wasted or dies with the old doctor, because he and the young men have never been on friendly terms.

In the fight which we have to wage incessantly against ignorance and quackery among the masses and follies of all sorts among the classes, *diagnosis,* not *drugging,* is our chief weapon of offense. Lack of systematic personal training in the methods of the recognition of disease leads to the misapplication of remedies, to long courses of treatment when treatment is useless, and so directly to that lack of confidence in our methods which is apt to place us in the eyes of the public on a level with empirics and quacks.

Few men live lives of more devoted self-sacrifice than the family physician but he may become so completely absorbed in work that leisure is unknown; he has scarce time to eat or to sleep, and, as Dr. Drummond remarks, in one of his poems, "He's the only man, I know mem, dont get no holiday." There is danger in this treadmill life lest he lose more than health and time and rest—his intellectual independence. More than most men he feels the tragedy of isolation—that inner isolation, so well expressed in Mathew Arnold's line—" We mortal millions live *alone.*" Even in populous districts the practice of medicine is a lonely road which winds up-hill all the way and a man may easily go astray and never reach the Delectable mountains unless he early finds those shepherd guides of which Bunyan tells, *Knowledge, Experience, Watchful* and *Sincere.* The circumstances of life mould him into a masterful, self-confident, self-centred man, whose worst faults often partake of his best qualities. The peril is that should he cease to think for himself he becomes a mere automaton, doing a penny-in-the-slot business which places him on a level with the chemists's clerk who can hand out specifics for every ill, from the "pip" to the pox. The salt of life for him is a judicious skepticism, not the coarse crude form, but the sober sense of honest doubt expressed in the maxim of the sly old Sicilian Epicharmus, "Be sober and distrustful; these are the sinews of the understanding." A great advantage too of a skeptical attitude of mind is, as Green the historian remarks, "one is never very surprised or angry to find that one's opponents are in the right." It may keep him from self-deception and from falling into that medical slumber into which so many drop, deep as the theological slumber so lashed by Erasmus, in which a man may write letters, debauch himself, get drunk, and even make money—a slumber so deep at times that no torpedo-touch can waken him.

It may keep the practitioner out of the clutches of the arch enemy of his professional independence—the pernicious literature of our camp-followers, a literature increasing in bulk, in meretricious attractiveness and in impudent audacity. To modern pharmacy we owe much and to pharmaceutical methods we shall owe much more in the future, but the profession has no more insidious foe than the large borderland pharmaceutical houses. No longer an honoured messmate, pharmacy in this form threatens to become a huge parasite, eating the vitals of the body medical. We all know only too well the bastard literature which floods the mail, every page of which illustrates the truth of the axiom, the greater the ingnorance the greater the dogmatism. Much of it is advertisements of nostrums foisted on the profession by men who trade on the innocent credulity of the regular physician, quite as much as any quack preys on the gullible public. Even the most respectable houses are not free from this sin of arrogance and ignorant dogmatism in their literature. A still more dangerous enemy to the mental virility of the general practitioner, is the "drummer" of the drug house. While many of them are good sensible fellows, there are others, voluble as Cassio, impudent as Autolycus and senseless as Caliban, who will tell you glibly of the virtues of extract of the coccygeal gland in promoting pineal metabolism, and are ready to express the most emphatic opinions on questions about which the greatest masters of our art are doubtful. No class of men with which we have to deal illustrate more fully that greatest of ignorance—the ignorance which is the conceit that a man knows what he does not know; but the enthrallment of the practitioner by the manufacturing chemist and the revival of a pseudo-scientific polypharmacy, are too large questions to be dealt with at the end of an address.

But there is a still greater sacrifice which many of us make, heedlessly and thoughtlessly forgetting that "Man does not live by bread alone." One cannot practice medicine alone and practice it early and late, as so many of us have to do, and hope to escape the malign influences of a routine life. The incessant concentration of thought upon one subject, however interesting, tethers a man's mind in a narrow field. The practitioner needs culture as well as learning. The earliest picture we have in literature of a scientific physician, in our sense of the term, is as a cultered Greek gentleman; and I care not whether the young man labors among the beautiful homes on Sherbrooke Street or in the slums of Caughnawaga, or in some sparsely settled country district, he cannot afford to have learning only. In no profession does culture count for so much as in medicine, and no man needs it more than the general practitioner, working among all sorts and conditions of men, many of whom are influenced quite as much by his general ability, which they can appreciate, as by his learning of what they have no measure. The day has passed for the "practiser of physic" to be like Mr. Robert Levet, Dr. Johnson's friend, "Obscurely wise and coarsely kind." The wider and freer the man's general education the better practitioner is he likely to be, particularly among the higher classes to whom the reassurance and sympathy of a cultivated gentleman of the type of Eryximachus, may mean much more than pills and potions. But what of the men of the type of Mr. Robert Levet or "Ole Docteur Fiset," whose virtues walk a narrow round, the men who do the hard general practices in the poorer districts of the large cities, in the factory towns and in the widely scattered rough agricultural regions—what, I hear you say has culture to do with him ? Everything! It is the bichloride which may prevent the infection and may keep a man sweet and whole amid the most debasing surroundings. Of very little direct value to him in his practice—though the poor have a pretty keen appreciation of a gentleman—it may serve to prevent the degeneration so apt to overtake the over-worked practitioner, whose nature is only too prone to be subdued like the dyer's hand to what it works in. If a man does not sell his soul, if he does not part with his birthright of independence for a mess of pottage to the Ishmaelites who harrass our borders with their clubs and oppress us with their exactions, if he can only keep *free*, the conditions of practice are nowhere incompatible with St. Paul's noble Christian or Aristotle's true gentleman.*

Whether a man will treat his professional brethren in a gentlemanly way or in a narrow illiberal spirit is partly a matter of temperament, partly a matter of training. If we had only to deal with one another the difficulties would be slight, but it must be confessed that the practice of medicine among our fellow creatures is often a testy and choleric business. When one has done his best or when a mistake has arisen through lack of special knowledge, but more particularly when, as so often happens, our heart's best sympathies have been engaged, to be misunderstood by the patient and his friends, to have evil imputed and to be maligned, is too much for human endurance and justifies a righteous indignation. Women, our greatest friends and our greatest enemies, are the chief sinners, and while one will exhaust the resources of the language in describing our mistakes and weaknesses, another will laud her pet doctor so indiscriminately that all others come under a sort of oblique condemnation. It is hard to say whether as a whole we do not suffer just as much from the indiscriminate praise. But against this evil we are helpless. Far otherwise, when we do not let the heard word die; not to listen is best, though that is not always possible, but silence is always possible, than which we have no better weapon in our armoury against evil-speaking, lying and slandering. The bitterness is when the tale is believed and a brother's good name is involved. Then begins the worst form of ill-treatment that the practitioner receives—and at his own hands! He allows the demon of resentment to take possession of his soul, when five minutes frank conversation might have gained a brother. What more joyful in a small or large community than to see the brethren dwelling together in unity. The bitterness, the rancour, the personal hostility which many of us remember in our younger days has been very largely replaced by a better feeling and while the golden rule is not always, as it should be, our code of ethics, we have certainly become more charitable the one towards the other.

---

* Sir Thomas Browne.

To the senior man in our ranks we look for an example, and in the smaller towns and country districts if he would remember that it is his duty to receive and welcome the young fellow who settles near him, that he should be willing to act as his adviser and refuse to regard him as a rival, he may make a good friend and perhaps gain a brother. In speaking of professional harmony, it is hard to avoid the trite and commonplace, but neglecting the stale old chaps whose ways are set and addressing the young, to whom sympathy and encouragement is so dear, and whose way of life means so much to the profession we love, to them I would give the motto of St. Ambrose. It is told of St. Augustine, after having decided to become a Christian, that when he visited St. Ambrose, at dinner with the venerable father and his brethren, one motto above all others on the wall of the refectory caught his eye and heart, "If you cannot speak well of your brother, keep silence!"

With our History, Traditions, Achievements and Hopes, there is little room for Chauvinism in medicine. The open mind, the free spirit of science, the ready acceptance of the best from any and every source, the attitude of rational receptiveness rather than of antagonism to new ideas, the liberal and friendly relationship between different nations and different sections of the same nation, the brotherly feeling which should characterize members of the oldest, most beneficient and universal guild that the race has evolved in its upward progress—these should neutralize the tendencies upon which I have so lightly touched.

I began by speaking of the art of detachment as that rare and precious quality demanded of one who wished to take a philosophic view of the profession as a whole. In another way and in another sense this art may be still more precious. There is possible to each one of us a higher type of intellectual detachment, a sort of separation from the vegetative life of the work-a-day world—always too much with us—which may enable a man to gain a true knowledge of himself and of his relations to his fellows Once attained, self-deception is impossible, and he may see himself even as he is seen—not always as he would like to be seen—and his own deeds and the deeds of others stand out in their true light. In such an atmosphere pity for himself is so commingled with sympathy and love for others that there is no place left for criticism or for a harsh judgment of his brother. "But these are Thoughts of things which Thoughts but tenderly touch," as that most liberal of men and most distinguished of general practitioners, Sir Thomas Browne, so beautifully remarks: and it may be sufficient to remind this audience, made up of practical men, *that the word of action is stronger than the word of speech.*

THE CONTRIBUTION OF PATHOLOGY TO SURGERY.

The Address in Surgery, Canadian Medical Association, Sept. 17th, 1902.

BY

John Stewart, M.B., Edin., Halifax, N.S.

There is no finer chapter in the history of our race than that which deals with the exploits of the early navigators of the fifteenth and sixteenth centuries. The sea was not then what it is now, mapped and measured, and marked by innumerable highways of travel. It was a dim mysterious realm, with unknown bounds: little more was known of its nature than when Homer sang, with a grand vagueness, of the Streams of Ocean.

And yet from Palos or from Bristol men set forth, urged by the deathless yearning of the human heart to know and to do; with no guide but the scanty scraps of experience, and their own hardy resolution, without sextant, without chronometer, without log-book, without chart, they sailed out into the vast, unknown, unmeasured, unsounded sea, fearing, but daring Mystery, and hoping for the Hesperides.

The seamanship of those heroes was perfect, their navigation, their knowledge of the principles which lay at the foundation of their art, their equipment in all that is now deemed essential, was crude and rudimentary. How could it be otherwise when Newton was yet unborn, when the old Ptolemaic theory of the universe still held sway, and at a time when success and failure were attributed to the benign or baleful influences of the stars by which they sought to guide their course?

Long and slow was the progress of their science ; centuries were to pass before their dreams came true, many and various were the sources from which help came, and even to-day there are problems unsolved, and a still elusive goal.

Nothing is more striking in the evolution of nautical science than the marvellous development of the last century, due chiefly to the introduction of steam as a motive power. It has created a new epoch.

I knew an old sea captain who told me that when he was an apprentice he sailed one winter morning in a brig called the "Westmoreland" from Belfast, bound out to St. John, N.B. "And," said the old man, "after boxing about the Western Ocean for one hundred and forty days we brought up in Cork harbour." Compare such a contingency with a voyage in such a ship as the "Oceanic," which leaves her dock with the punctuality of clockwork, a scarcely greater punctuality than that with which she arrives in dock on the other side of the Atlantic.

The contributors to this wonderful advance may be divided into two classes. There was the practical sailor, quick to observe, ready to act, full of resource, with all

> "The virtues which his perilous life
> Extracts from Nature's elemental strife."

And there was the philosopher, the man of reflection, who pondered the reports of these adventurers in strange seas and under new skies, and sought for explanations of mystery, who followed Learning for her own dear sake, and counted himself happy if only he might know the causes of phenomena and evolve a Cosmos from seeming Chaos.

A parallel, not altogether fanciful, may be drawn between those pioneers of ocean travel and the early masters of our craft. Those made their way through the uncertain world of waters, very synonym of change and unrest, guided on the one hand by their own hard-won experience and the traditions of their fathers, and on the other by the application of principles laid down by men who made a philosophic study of Nature, who searched into the secret of the sea, who built up the Sciences of Astronomy, Geography, Hydrography.

And these worked in the sphere of the human organism, mysterious, intricate, inexplicable, and they too worked on two lines, the long and weary and often fallacious track of empiricism, and the ampler but often disconnected road constructed by those whose chief aim was, in the words of him who led the vanguard, to "study and search out the secrets of nature."

There was a Cosmography—of a kind, and methods of measuring Space and Time before Copernicus and Tycho Brahe, and there must have been some sort of Pathology, some notion of the nature of the morbid process in the mind of the first prehistoric surgeon who plugged a wound or opened an abcess. The troglodyte surgeon must have had some notion why he chipped holes in his patient's skull.

But was the lore of the mediæval mariner, regarding the earth as a fixed expanse, around which the heavenly bodies wheeled, casting a horoscope to secure a favourable voyage, sailing a wonder-sea of mystery and portent—a man who had anchored to the Kraken's rugged side and who was well acquainted with the Mermaid—was his science more unscientific than that of his brother the surgeon? What a limbo of fantastic and irrational notions filled the minds of our colleagues of the Middle Ages! Yes, even of men who lived a century ago and whose voices still have power.

It is difficult for us to realize the strange notions of a time when the ancient humoral pathology in a very solidist manner still projected itself into the vortex of the Renaissance, when humoralist and solidist rose, struggled, and sank, to reappear in new disguises, as they do to this day, when the vitalist imagined his "Archæus," when skilled clinicians considered scabies a typical dyscrasia, and when a keen and cultured mind could believe in the "*pulvis sympatheticus,*" and when the grotesque philosophy of Paracelsus, with its strange fore-gleams of latter-day truth, held sway. Mediæval pathology is like a dark and troubled sea, where gleams of truth shine pale through wildering mists, and where conflicting currents seethe and boil,—"dark fluxion, all unfixable by thought."

And what Navigation was to Seamanship, Pathology is to Surgery.

Advance in nautical science was conditioned by the advance in the study of natural phenomena, by invention of instruments of precision, and the application of these to the purposes of the mariner. From China came the mariner's compass; from Nuremburg came the watch, precursor of the chronometer; from Flanders came Mercator with his charts; Scotland sent Napier with his logarithms; England supplied Hadley and the sextant; and the fore-runner of the Nautical Almanac—the mariner's *vade mecum*—in the shape of the first almanac, came from Poland.

And nothing is clearer than that progress in surgery depends on the study of vital phenomena, and the application of the results of these studies and of new methods to the problems of disease and injury.

The pyrotechnics of Paracelsian dreamery were still blazing on the dim coasts of the old world pathology when the morning star of the new era appeared in the person of the first real anatomist, Vesalius, and day dawned with William Harvey, the Columbus of modern medicine. Harvey led the way in the application of experimental methods to biological questions. The result of his great discovery was a complete change in pathological ideas, and a new school of pathology soon arose under the guidance of the famous Boerhaave, at Leyden. He, impressed by the study of the physics of the circulation, and aided by the discovery of the capillary system by Malpighi, and of the red corpuscles of the blood by Swammerdam and Leeuwenhock, initiated the study of the local changes in diseased parts, and soon the first text-book of General Pathology was brought out by Gaubius, distinctly biological in its view, and having for its text the maxim of Boerhaave, "*Morbus est vita praeter naturam.*"

It was under the influence of these views and of the new methods of study that Morgagni produced his epoch-making book, "*De Sedibus et Causis morborum,*" of which Virchow says, "it was the first time that the sum total of actual knowledge of the material alterations which disease occasions in the body was brought before the world."

With this Pathological Anatomy began, and the way was prepared for John Hunter. He it was who introduced the experimental method into the study of disease, and by virtue of his intuitive genius, his amazing capacity for work, and his practical applications of the results of his researches, has well earned the title *Father of Scientific Surgery.* "From the time of Hunter to the present time," says Billroth, "English surgery has had something of grandeur and style about it."

In the vast field of subjects which Hunter explored it is difficult to single out any one for pre-eminence. But it is undoubtedly on the score of his celebrated operation for popliteal aneurism that he is generally known as a practical surgeon. Mr. Butlin, in his interesting Cavendish Lecture, tells us, not without a stroke of humour, of the great expectations he had formed of interesting instances of the direct influences of pathological study on practical surgery, and how he found absolutely nothing of the sort in the history of medicine until he came to Hunter's operation, which he calls "the *one* example, the *only* example up to that time, of deliberate surgical invention founded on the study of pathology by the man who made the invention."

But it is not in particular instances only, in improved methods of diagnosis, in aids to operative surgery, that the contribution of Pathology is found. It is rather in the new principles gained, and in the new attitude towards Nature and Phenomena that Pathology has ennobled Surgery.

Hunter helped us to understand our power of interrogating Nature, of interpreting her answer, and our power of applying the knowledge so gained to the practical problems of our art. This was the beginning of Scientific Surgery, but much remained to be done, and it is noteworthy that the chief actors in the movement now were among the surgeons. Who can estimate the value of the impetus given to pathology by Xavier Bichat in his studies of the tissues, or of Andral in his hæmatopathology. After Bichat came Dupuytren, the practical surgeon, and in England Charles Bell revolutionized our theories of the Nervous System.

The next great advance was to arise from a study of plant life, and the researches of Schwann and Schleiden paved the way for the Cellular Pathology of Virchow—the basis of our present system of Pathology.

And a shadow falls upon us gathered here as we realize that the veteran master, the undisputed leader of pathological thought and progress for over fifty years, has fallen, and we unite in the desire to lay our spray of cypress on the tomb of him whom we all considered the greatest German of our time.

But with all these new acquisitions, the exact anatomical knowledge, the clearer views of morbid action, there was still for the surgeon an unexplored sea of mystery. The Pathologist went on his way rejoicing in his rapidly increasing store of knowledge, the Surgeon still lingered, with anxious mind and heavy heart, for the question of questions to him was still unanswered.

The healing of wounds was the Enigma of Surgery, and the characteristic difficulty was the uncertainty attaching to the healing process. Here a wound healed quietly and soundly, without pain and without causing constitutional disturbance, and there it became inflamed, suppurated for weeks, causing intolerable anguish and exhausting the patient. Why the difference? Why so much more danger from the thrust of a pike than the stroke of a sabre? Why should a fracture of the leg, in which a splinter of bone had cut through the skin, be so much dreaded, while multiple simple fractures were seldom dangerous to life? Why was the peritoneum virtually a closed door to the surgeon's desires? Why did the implication of a joint add so terribly to the danger of a penetrating wound? Who can estimate the amount of anxious thought that has been given to this subject, who can gauge the disappointments that resulted from the application of so many theories? Empiricism was at its wits' end. Cold lotions, and warm poultices, stimulating liniments and soothing ointments, wet dressings and dry, no dressings at all, all had their advocates, their occasional successes and their inevitable failures. The only certainty in the whole sad field was the certainty of failure, the certainty that however brilliant a series of cases a surgeon might have, it was sure to be broken some day, for some inexplicable reason. We can only wonder at the marvellous correctness of some of the guesses at truth that were made, and admire the results which were sometimes attained by men who would almost appear to have had an intuitive, if unconscious, knowledge of the truth. Witness, for instance, the extraordinary results of Alanson at the Royal Infirmary of Liverpool in the beginning of last century. And mark that Alanson was a pupil of John Hunter.

The idea of a *materies morbi* is a very old one, and doubtless the idea that this might be a species of living matter is also old. The notion of the parasitism of disease crops up repeatedly in the history of pathology. Monti, in his "Fundamental Data of Modern Pathology," claims for his fellow-countryman, Agostino Bassi, the distinction of being the founder of pathogenic microbes.

However this may be, it is certain that by the close of the eighteenth century this conception was present in the minds of many scientific workers.

It was reserved for Schönlein to prove in 1839 that the disease known as Tinea, and considered as a typical "humoral" disease, and not only so, but hereditary, was really due to the growth of a fungus.

About fifty years ago Davaine and Chauveau proved that the disease known as anthrax was caused by the presence of an organism discovered in the blood of affected animals by Pollender in 1849.

The mists of conjecture were condensing and trickling into clear tiny rivulets, and soon these were collected by the genius of Pasteur into the grand fountain head of the mighty stream of bacteriology. But the practical surgeon had gained nothing towards the elucidation of his enigma. Perhaps at no time was there greater helplessness in the treatment of wounds. The advance in diagnosis and improved methods of operating introduced by such men as Syme, and Nelaton, and other brilliant surgeons of the period, and the great discovery of anæsthesia had stimulated operators to increased activity. But the surgeon and his patient seemed the sport of a capricious Fate. Epidemics of septic fever, pyæmia, hospital gangrene, and erysipelas decimated hospital wards and often attacked fifty per cent. of all operation cases, and hospitals were being closed. Surely surgery was suffering eclipse.

Then came Lister, and the dark hemisphere rolled in one grand movement from its age-long penumbra into noon-day. Surgery, modern Surgery, was born. In the chronology of our craft, time is divided into Before and After Lister. The shadows of fear, anxiety and uncertainty left the surgeon's face, for now that

> "Wise rare smile was sweet with certainties."

It is a fascinating thing to trace the history of a great discovery, and when the time comes to write the history of the Listerian Renaissance, it will be found the Romance of Surgery.

"The great artist," says Amiel, "is the simplifier." "Art is simply the bringing into relief of the obscure thought of nature; a simplification of the lines, a falling into place of groups otherwise invisible. The fire of inspiration brings out, as it were, designs traced beforehand in sympathetic ink. The mysterious grows clear, the confused plain; what is complicated becomes simple, what is accidental, necessary. . . . . Every ideal is the key of a long enigma." Lister's ideal fitted the key to the Enigma of Surgery.

I do not know that we are yet in a position to understand the profound change which this ideal brought into pathology. We cannot yet find a proper perspective to view the work of him who is in surgery what Newton was in physics, "that master mind to which," as Pearce Gould says, "we owe the greatest impetus that surgery has even felt."

As the new system was developed step by step with irresistible logic and exact experiment, what illimitable vistas opened up before the surgeon, what realms undreamed of before.

"Then felt I like some watcher of the skies
When a new planet swims into his ken ;
Or like stout Cortez when with eagle eyes
He stared at the Pacific—and all his men
Look'd at each other with a wild surmise—
Silent, upon a peak in Darien."

Lister, like Hunter, united in himself the pathologist and the surgeon, and like him, he worked on the lines of Harvey, and "searched out the secrets of Nature by way of experiment." The greatest contribution of pathology to surgery is through experimental pathology.

I have alreaedy had the honour of bringing before this Association some of the grounds on which we claim Lister as a great pathologist. His work on Inflammation, on the Coagulation of the Blood, and on the action of the nervous system as a powerful factor in pathological processes, has been of direct and inestimable value to surgery apart from his *magnum opus*. I will now indicate some of the ways in which the pathological researches of others have directly influenced surgery. I shall choose three great departments of operative surgery.

The old operation for popliteal aneurism was to tie the vessel on either side of the tumour, cut it open, turn out the clot and allow the wound to heal by suppuration. The mortality was very high, the usual cause of death being secondary hæmorrhage from the proximal ligature cutting its way through the artery. The current pathology of aneurism, founded mainly on some observations of Haller, ascribed aneurism to a weakening of the vessel wall. Hunter came to the conclusion, from clinical and *post-mortem* study, that aneurism was due to disease of the arterial coats. But he was not content to think so. He experimented on the dog, and found that mere weakening of the vessel by removal of portions of its outer walls did not lead to aneurism. He proposed to tie the artery high up where it was healthy, arguing that the current in the artery being thus shut off, pressure in the aneurism would cease, and coagulation would take place; also that the collateral circulation would be sufficient to keep up the vitality of the limb without causing appreciable reflux into the sac. And what of the tumour itself? Instances had been recorded by Valsalva and others of the disappearance of aneurismal tumours which had undergone spontaneous cure, and whether Hunter was aware of this or not, he seems to have trusted to absorption for the removal of the solidified contents of the sac, and we all know the brilliant success that proved his reasoning true.

A more modern instance of an operation conceived in the same spirit is afforded in the first nephrectomy, by Gustav Simon of Heidelberg. A patient came under his care suffering from a ureteral fistula. In the sixties probably no surgeon had yet dreamed of ureteral anastomosis, and removal of the kidney seemed to offer the only chance of cure. But was the operation feasible?

It must have been long known, thanks to morbid anatomy, that one kidney might be destroyed by disease and the patient yet remain healthy. It was a quite different matter to remove a kidney by operation without any opportunity for compensatory changes to take place. But experimental pathology had furnished proof in the hands of Zambeccarius that, in the dog, one kidney might be removed, without appreciable injury to health. Simon repeated these experiments. He learned that the chief danger was from peritonitis, that there was not much fear of hæmorrhage, that uræmia was not to be dreaded, that neither albuminuria nor cardiac hypertrophy followed, and that compensatory hypertrophy occurred in the remaining kidney. And so, in 1869, he removed the kidney and succeeded in curing his patient of her distressing malady.

Few things would have amazed and delighted John Hunter more than the recent developments in Brain Surgery, and especially the steps by which the perilous ascent was gained. Diseased brains had been examined since the time of Morgagni, but it was the genius of Broca which first pointed to a *sedes morbi* for aphasia. The same fortunate blending of clinical acumen with exact morbid anatomy enabled Hughlings Jackson to extend our knowledge of the dependence of intercranial diseases on local alteration of structure. But it was necessary to have the irrefutable proofs afforded by the experiments of Fritsch and Hitzig and of Ferrier, before the surgeon could project his chart of cerebral surgery, and sail for the island of Reil.

Now, it is evident that I need not weary you by going into further details to show how pathology, in its various departments of morbid anatomy, etiology, chemical, microscopic and experimental pathology has contributed to the advance of surgery. Every day brings new evidence.

Our understanding of morbid processes has been and is still being enlightened, our power of diagnosis is increased, and our ability to cope with disease and injury is extended.

It is often said that the foundation of surgery is anatomy, and this is true in a sense, for anatomy is the first step to pathology. A knowledge of anatomy is absolutely essential to the study of the human body. But anatomy deals with dead matter, pathology with living, if morbid, activities. Anatomy is finite, but pathology in the permutations which may occur in anatomical elements is infinite, and it is the realm which the surgeon must explore who wishes to have a firm grasp of the principles of his art. Much has been learned, but more lies waiting discovery. There is always another "peak in Darien" and many surmises to make sure.

"*O mare o littus verum secretumque Μονσειον quam multa invenitis quam multa dictatis*"

Navigation owes much to the various institutes founded to further its study. Who can tell the value of the early naval schools in Spain, or of the Greenwich Observatory. And so if pathology is to flourish, provision must be made for its study. Every hospital should have its Pathological Institute.

And here we know we shall find ourselves in collision with that section of the public to whom science is uncongenial and medical science an abomination. Pathological study may not always seem interesting or profitable. The ancient mariner would have smiled to think the Tuscan artist, with his optic glass, could be of any benefit to him, and perhaps Galileo was thinking more of descrying new lands, rivers and mountains in the moon than of assisting the sailor; nevertheless, he was helping to lay the foundation of the science which was to make the modern sailor's work possible.

And when the father of our own illustrious Lister, applying his knowledge of the physical and chemical characters of glass, perfected our achromatic microscope, there were practical surgeons who would certainly have failed to see any bearing which his work had on theirs.

When watches were first made in Nuremberg, the only thought in the maker's mind probably was the accurate registration of the passing of time. But Gemma, the Italian, intent on perfecting methods of navigation, seized the idea of the watch at once as a means of computing longitude, and led the way to the use of the chronometer. And the gain is not necessarily all one way, for the practical surgeon, making careful clinical records, may furnish the pathologist with new ideas, and, if one may wrest the words from their original meaning, he,

"Doomed to go in company with Pain,
And Fear and Bloodshed, miserable train,
Turns his necessity to glorious gain,"

and may help to introduce new forces into the healing art.

Here in Canada, while we have had ample experience of the anti-vaccinationist, we have scarcely made the acquaintance of his colleague, the anti-vivisectionist. But the signs of the times indicate that full scope will soon be given to his vituperative faculty, for in the Universities of McGill and of Toronto pathological research has fairly started on its way.

If we cannot, however, "mollify the spirit of captious contradictors," we may perhaps deprive them of an audience by teaching the public that those who devote their time to the investigation of disease, and who may sometimes find it necessary, for the elucidation of the problems submitted to them, to inflict pain on animals, may be lightening the burden of humanity as well as he who directly mitigates its pain, and that their work may be regarded like that of every conscientious surgeon, as a sacred duty, a responsible task carried out "As ever in the great Task-Master's eye."

MENTAL DISTURBANCES DURING THE PUERPERIUM.

BY

W. H. Hattie, M.D.,
Medical Superintendent, Nova Scotia Hospital, N S.

The occurrence of an attack of mental disorder at the time when, under ordinary circumstances, more than the usual amount of happiness reigns in the home, is an event which is most dramatic in its nature. The insanity which develops during the puerperal period manifests itself with startling suddenness, and usually comes like a bolt out of a clear sky. After the tension which all concerned can scarcely help experiencing during the months of pregnancy, it is but natural but that the days succeeding the birth of the child should be glad and joyous, and to the new mother especially the feeling of relief and content is almost inexpressible. When this pleasant mental state suddenly and without warning becomes transformed into one of the acutest psychoses with which we have at any time to deal, we are brought to face with perhaps the most deplorable accident which can possibly happen to any woman; while the shock to family and friends, and the enforced separation of child and mother, combine to make the disaster the most to be dreaded of all conditions which may possibly complicate the puerperal state.

The condition is one, the frequency of which it is impossible to correctly estimate. During the three years ending September 30th, 1901, we admitted to the Nova Scotia Hospital 183 women, of whom 19, or a fraction over 10 per cent., were suffering from insanity which had developed during the six or eight weeks succeeding parturition. But, inasmuch as the curability of this type of cases is so generally recognized, an effort is usually made to keep the patient at home, and, doubtless, many cases occur which are never recorded, and, consequently, our statistics of this form of alienation cannot be even approximately correct. The fact, however, that 10 per cent. of the women who came to us within these three years gave a history of the association of mental disturbance with the puerperal period is sufficient indication that this association is very frequent and deserves the careful attention of the physician.

The term "puerperal insanity" should perhaps be abolished, inasmuch as there is nothing especially characteristic of the form of disturbance manifested, save that it develops within a period arbitrarily determined as from six to eight weeks immediately suc-

-ceeding delivery. About two-thirds of the cases present symptoms of mental exaltation, while the remaining third are of the depressive type. The majority of the cases showing exaltation present the psychic symptoms which, according to the older nomenclatures, would class them as mania. In this day, when classifications of mental disease appear with such rapidity as to suggest a Gatling gun origin, we have our choice of a large variety of titles which are applicable to the symptom-complex, but in the meantime the general practitioner will probably be satisfied with the older methods and continue to style such cases mania. Of the depressive type, the greater number of cases present the picture of melancholia. Comparatively few cases of insanity occurring during the puerperium are to be classed under such heads as paranoia, paretic dementia, or epileptic, periodic or hysterical insanity. Thus the specific designation "puerperal insanity" is perhaps scarcely warranted, and several recent writers omit reference to such a form of mental disorder. And yet, as Clouston says, "to know that a case is one which has begun after recent childbirth, is to know far more about it, for the treatment and for prognosis, than to know it as mania or melancholia."

The causes of the mental disturbances of the puerperium may be classed under several heads, and, according as causes of one or other of these varieties have predominated in the production of the disorder, so do the symptoms vary. Among the causes, we have first to consider that inherent defect of stability in the nervous tissues which apparently descends from parent to offspring and which we speak of as hereditary predisposition. This is a very potent factor in the causation, although determinant only when reinforced by the mental strain preceding the event of the shock caused by the act of delivery. But heredity is not a necessary feature, and the larger proportion of the cases result from causes over which the physician has control; the accumulation within the system of certain waste products of metabolism; and infection from without, through abrasions of the parturient canal, or, possibly, in some instances, through excoriations of the nipple. In other words, cases of puerperal insanity, so called, are usually the result of either an intoxication, or an infection, or of both combined. The infective element in three cases recorded by Berkley was the streptococcus pyogenes. The infectious cases in particular show the clinical picture which may be regarded as typical of the insanity of this period.

Cases of the manic type usually manifest more or less marked insomnia as the first symptom. Perhaps there may be a tendency to depression—a dull, anergic condition, in which the patient is disinclined to make any effort, and may even complain of a sense of discouragement or foreboding. This gives place within a very few hours to a degree of vivacity which is unusual to the patient. The woman surprises her friends by her bright conversation, her ready command of language, the remarkable activity and accuracy of her memory, her aptness at repartee and the incisiveness of her comments on matters under discussion. All the mental faculties show unusual acuteness. The exhilration thus shown, however, is unlikely to arouse any suspicion of the real cause. Perhaps attention may be attracted to the motor restlessness or fidgettiness which is likely to be evidenced early in the attack, and this symptom may be the one which determines the friends to summon medical assistance.

Very quickly more characteristic symptoms develop. The eyes sometimes become preternaturally bright, and the patient casts furtive glances about her. She becomes suspicious of her friends, and quickly shows marked aversion to them, and especially to husband and child. The conduct becomes wayward, there is incessant motor activity, hysteric outbreaks are common, the voice becomes harsh and raucous, speech is incoherent, language is often profane and sometimes obscene, sleeplessness is absolute, food is refused, clothing and furniture are destroyed, and impulsive acts are common. Many of these symptoms result from the delusions under which the patient labours—many more are the expression of reaction to hallucinations, of which those involving hearing and sight are most common and sometimes very persistent. With these signs of disturbed mental action, we also find many somatic symptoms. The pulse is rapid, and, at first, full and bounding, the temperature is usually elevated several degrees, there is rapid loss of flesh, the lips and tongue quickly dry, crack, and become covered with sordes, there is usually suppression of the lochial discharge, and often, when the patients intelligence is not too much affected, tenderness over the uterus can be determined.

Sometimes the temperature runs very high, and the condition must really be regarded as septicæmia with delirium. In fact, many of the cases are not really separated from this category, and time alone will clear up the diagnosis in such instances. Recovery from the febrile condition with persistence of the mental excitement, will stamp the case as one of insanity rather than the delirium of fever.

Two features of this manic type of puerperal insanity merit especial attention. One of them is the tendency to impulsive acts. Generally the impulsions are reasonless and aimless, and yet the result may be quite as disastrous as if they had been carefully planned. Thus the patient may suddenly and without warning violently attack her child or any person near at hand, or may destroy herself in blind obedience to a momentary fancy. The other matter of special import is the aversion to food. This is a very constant symptom, and is usually the result of the delusion that the food is poisoned or tampered with in some way. It is a symptom that should be combatted from the very outset, as it is of the highest importance that nutrition should be maintained, and this can be done only by forced feeding.

The depressive type of cases are not more than half as numerous as the manic type. Regis puts the proportion at 1 in 4. There is nothing of special moment in the symptomatology of these cases. The usual features of melancholia are presented—the dejected look, the lax musculature, the retardation and painfulness of the thought processes, the shrinking, crouching attitude, the desire for solitude, the constant vague fears, the ever dominant distress of mind, remorse, expectation of eternal damnation, utter despair, the fearful hallucinations, the fear of death and yet insistent desire to end life, the accompanying somatic symptoms; hard, brittle hair, harsh, dry skin, paralysis of appetite, obstipation, etc., all these differ in no essential particular in the melancholy following childbirth from the melancholy found under any circumstances.

Of much greater importance, from a practical standpoint, than a discussion of the symptomatology is a consideration of the causation of the mental disturbances associated with the puerperal period, for, as I have already said, many cases depend upon causes which are quite within the control of the physician. In patients with a defective nervous organization any unusual stress is likely to precipitate an attack of insanity, and such patients should be guarded with especial care. Much may undoubtedly be accomplished towards the prevention of mental breakdown even in those most predisposed, and every precaution should be taken to minimize, as much as possible, the stress to which the patient is subjected at this critical period. And unless the nervous organization is unusually liable, there should be no morbid mental condition develop at this time.

I make this statement with due deliberation. It is my firm conviction that many of the cases of insanity which occur during the puerperium are preventable, and that the same means which are indicated in the prevention of other undesirable complications would also prove effective as prophylactic of this disaster.

In the normal individual the stress of the reproductive act is not sufficient to cause insanity. Nevertheless, the stress is very great, and when acting in conjunction with an inherent liability of nervous organization, or even with a toxic or infectious state independent of nervous instability, very grave consequences may follow.

As Mercier points out, the main contribution of the female to the constitution of the offspring is the *matter* of which the body is composed; the contribution of the male is the *energy* which animated the matter. From the mother the offspring derives its bulk, its mass, the material ingredients of its composition. The female, in giving life to her offspring, parts with a portion of her own. This loss is evidenced by the weakness, prostration, and increased vulnerability to toxic and infective influences which characterize the parturient woman. And when to this unusual demand upon the energy, which cannot but influence the highest nerve regions, we add the emotional state which the arrival of the child inevitably establishes, the sudden transfer of circulatory, nervous and glandular activity from uterus to breast, and the immediate imposition of the duties of motherhood, it is readily seen that the strain to which the nervous system is at this time subjected is very great indeed.

For some years past, however, the feeling has been growing and strengthening that as long as the nutrition of the nervous tissues is not vitiated, there is little danger attendant upon a mere increase of the dissipation of nervous energy. In fact, we are coming to regard the insanities, apart from those due to structural or other inherent defect, as being essentially the manifestation of mal-nutrition of nerve tissues.

Now, what are the possibilities of interference with the normal processes of nutrition during the pregnancy and the puerperal condition? Consider first the conditions which we frequently find towards the end of pregnancy.

Even in cases which are perfectly normal, as far as our knowledge permits us to judge, pregnancy entails disturbances in the general nutrition which may have a wide reaching effect. The unusual determination of blood to the uterus, the increased intra-abdominal pressure, and the demand upon all parts of the system for the nutriment needed by the fœtus, all influence more or less profoundly the nutrition of the woman. The mechanical interference with the action of the bowel tends, in many instances, to cause constipation, and this leads to the retention within the system of effete matters which, when reabsorbed into the circulation, have a definitely prejudicial action upon the brain cells. The extraordinarily rapid metabolism going on in the walls of the uterus, and the increased activity of the metabolic processes generally, throw a very unusual strain upon the kidneys, and these organs, as is well known, very often fail to meet the demands made upon them. As outward expression of disordered secretory activity we get the albuminurias, the glycosurias, the lactosurias, the phosphaturias, and various other alterations in the chemical composition of the urine so commonly found during pregnancy. These all mark more or less grave changes in the nutritive processes, and are often an index of an autotoxis resulting from deficient excretion of poisonous waste products.

But while the discovery of these morbid states of urine is of the greatest significance, it is a well recognized fact that we should not depend upon so candid a disclosure of impending mischief. The frequent occurrence of a non-albuminuric eclampsia will instance my meaning—for eclampsia and insanity are both results of poisoning of nerve tissue. The physician should therefore be watchful for certain general symptoms which are indicative of a surplusage of toxic matters in the blood. Such symptoms as headache, gastric disturbances, high vascular tension, and physical and mental lassitude, particularly if associated with any discoverable evidence of failure in function of skin, lungs or liver, as well as of bowels or kidneys, should put the physician upon his guard, and it is by no means necessary that there should be signs of renal inadequacy in order that there should be retention of toxins within the system.

Even in the absence of any retained toxins, according to some excellent authority, the hydræmic condition of the blood may cause such denutrition of nerve cells as to lead to mental disturbance in a not-too-well balanced brain. This is seen in anæmia from any cause. It must be borne in mind, however, that in anæmic states insufficient excretion of urates and of ammonium carbamate is commonly noted. Recent studies go to show that the carbamate of ammonia is intensely irritating to nerve tissue, producing epileptiform convulsions in experimental animals. It is, therefore, quite conceivable that the hydræmic condition so usual in pregnancy may have a defining effect in determining a mental collapse.

A psychosis is a fairly common sequel to an eclamptic attack. A careful analysis of this association was made by Olshausen, who found that in 200 cases of eclampsia mental disturbance followed in 11. The literature afforded him a record of 515 additional eclamptic cases, of which 31 subsequently developed insanity. Thus, in a total of 42 out of 715, or in nearly 6 per cent. of cases of eclampsia, mental symptoms also developed. Is it unreasonable to assume that this connection is more than mere coincident, and that the neurosis and the psychosis have a common cause?

Septic infection, through any of the channels previously mentioned, plays a part in the etiology of puerperal insanity which does not require any special argument. Mental symptoms, in the shape of delirium, are so frequent an accompaniment of febrile states that everyone has noted the connection. I feel, therefore, that it is unnecessary to deal further with this phase of the problem.

The treatment of the mental disturbance of the puerperium is, of course, preventative and curative. And the measures by which prevention can be accomplished are largely suggested by what I have said with reference to causation. Just those measures which the careful obstetrician adopts to prevent the much dreaded eclampsia are to be regarded as of the greatest service in the prevention of mental breakdown also. So there is additional reason for the exercise of every means which may lessen the production of toxic matters and prevent their accumulation within the system. Careful regulation of diet and exercise is very important, and it must be the aim of all treatment to lessen the strain upon the emunctories as much as possible. It is also very essential to maintain all the emunctories in a state of the highest functional efficiency.

The avoidance of sepsis is of the greatest importance, and every possible precaution should be taken against such a complication. Should any evidence of septic infection become manifest, it should receive immediate treatment according to now well recognized principles.

Systematic effort should also be made to prevent the development of the hydræmic condition which is so usual to the pregnant state. In this we have but to follow the line of treatment which we would adopt in treating this symptom under any circumstances, always being careful to first eliminate any causative factor which it is possible for us to control.

Should our best efforts in the way of prophylaxis prove, unfortunately, to be unavailing, and in spite of such precautionary measures as I have indicated, should mental symptoms assert themselves, we are then obliged to treat one of the most acute forms of mental disturbances with which the physician has to deal. Inasmuch, however, as the aim of my paper is especially to point out the possibility of prevention, I will merely outline the special features to be followed out in treatment.

The intensity of the motor excitement usually demands sedation, but drug treatment must always be employed after due consideration of the physical state in general, and the kidney condition in particular. Very often the hot pack or the full warm bath will prove rapidly effective in quieting the patient and securing sleep. If this is not successful, the use of drugs may become almost imperative. The most active drug, under ordinary circumstances, is hyoscin hydrobromate, in a dose of gr. 1-120, gr. 1-96 hypodermically, but I would not recommend the use of this drug unless the physician can maintain a close supervision of the patient for at least three hours after its administration. Duboisin sulphate in similar dosage, also, has its advocates, but requires the same caution in its administration. The bromides find a useful place in this class of cases, but they act somewhat slowly and must be given in full doses. No matter what form of sedative is selected, it is important to stop it immediately the need for it ceases to be apparent. Then tonic and reconstructive measures should be adopted.

A most essential part of treatment, perhaps of even greater importance than the securing of sleep, is feeding. The patient usually refuses food, and this must be forced upon her, and administered in very large quantities. When forced feeding is necessary, I much prefer the œsophageal or stomach tube to the nasal tube. The passage of the œsophageal tube is somewhat more difficult than the passage of the nasal tube, but it renders the feeding process more satisfactory and much reduces the danger of the inspiration of food into the lungs. Moreover, the mucous membrane of the œsophagus is not so liable to injury as the nasal mucous membrane.

Of food, milk must form the basis, and should be given liberally. Eggs are also given most advantageously, and, if the kidneys are functioning properly, should be given in quantities which will certainly seem huge to the patient's friends. A dozen a day will be none too many if there be no contraindication. Custards, sago, tapioca, beef juice, etc., should enter largely into the dietary. Always remember the need of adding salt to the foods administered by tube. And remember to begin feeding at the very outset—just as soon as food is refused.

Sometimes flushing the colon with normal saline solution has caused the patient to take food voluntarily, and has obviated the necessity for tube feeding.

The question of home versus hospital treatment is one not easily answered off-hand. It is usually better to separate patient from friends. It is rarely possible to discipline a patient at her own home as the character of her case requires. Moreover, the effect upon other members of the family, especially children, of having a noisy, profane, destructive and altogether incorrigible lunatic in the house is often very bad. However, the usually favourable course of these cases should weigh in favour of home treatment if such objections are not insuperable.

The prognosis is generally good. Probably from 70 to 75 per cent. of cases recover. Sometimes the convalescence is protracted over many months. Most recoveries are established within from three to six months. Reestablishment of menstruation is of the greatest importance in determining the permanence of recovery. Relapses are not very common, but recurrences, if other pregnancies occur, are frequent, and this fact should always be impressed upon patient and husband.

ON THE WORK ACCOMPLISHED BY THE LIVERPOOL SCHOOL OF TROPICAL MEDICINE AND ITS EXPEDITIONS TO THE WEST COAST OF AFRICA.

BY

J. L. Todd, M.D. (McGill).

Although malaria as a distinct disease had been clinically recognized for many centuries, its cause remained unknown until a little more than twenty years ago.

At succeeding periods, far different theories, advancing various factors as causative agents, have been in vogue. Even as long ago as 118 B.C., Varron suggested that the disease might be caused by an infection of minute animals.* Bad air, as the name indicates, swampy miasma, impure water, moulds, infusoria and bacteria have all been blamed; but it was not until so recently as 1880 that Laveran first described the hæmamœba which was soon, though not without great opposition in various centres, recognized as the direct cause of paludism.

Perhaps the most urgent objections to the new theory emanated from the Italian school which directed its attention almost entirely to the bacterial theory, represented by the bacillus of Klebs and Tomassi-Crudell,† at the same time asserting that Laveran's organisms were merely altered red blood corpuscles. Indeed, so late as 1882 did an Italian, Chiavuzzi, describe experimental " Malaria" induced in a rabbit by injection of a specific bacterium, the so-called "*Bacillus Malariæ.*"

So soon as the truth of Laveran's announcement became recognized, a whole army of workers in all parts of the world was attracted to the new field so opened to them; and knowledge concerning the various clinical types of the disease and their causative parasites was rapidly accumulated. Three distinct species, at least, of the "Plasmodium" were quickly recognized and described, and the meaning of their phenomena of Sporulation and Flagellation was discovered.‡

Up to 1898, however, the mode of infection was unknown. In that year *Ross* made the discovery—the credit of which is his alone—that a mosquito of a certain sort, *Anopheles*, was an intermediate and apparently a necessary host in the life history of the plasmodium.

---

* De re rustica Lib. 1, cap. 12. Advertandum etiam si qua erunt loca palustria et propter easdem causas, et quod arescunt, crescunt animalia quædam minuta, quæ non possunt oculi consequi, et per æra intus in corpus per os, ac nares perveniunt atque efficiunt difficiles morbos.

† Archiv. f. exp. Path. v. Phar., 11, 1879.

‡ Canadians will be pleased to remember the work of three McGill men on this subject, of Osler, Hewetson and Lafleur.

He demonstrated that a very important cycle of its development took place in the body of the insect, and that, with the insect's bite, active disease-producing sporozoites were injected, together with the secretion of the veneno-salivary gland, into the definitive host, man.

Very shortly after publishing his epoch-making results, Major Ross came to England and the Liverpool School of Tropical Medicine. Through the generosity of merchants interested in the West Coast, funds were supplied enabling the school to initiate a series of enquiries into the sanitary conditions obtaining in West Africa, chiefly with the view of ascertaining the feasibility of destroying *Anopheles*, at all events near European settlements, and so preventing malaria; naturally this was the most obvious practical application of Ross's discovery. It must be remembered that at this time very little was known concerning the habitat, and habits, of *Anopheles*, and that it was not possible to give an intelligent opinion, based on facts, concerning the possibility of exterminating mosquitoes in any given locality.

Since 1898 expeditions have been sent out by the Liverpool School to all the British possessions on the West Coast from Bathurst to Old Calabar, and as far inland as Northern Nigeria.

Especially does the extraordinary amount and importance of the varied knowledge thus collected command admiration when the conditions under which the members of the expeditions worked are considered. The climate, their fewness, and the merely topographical work necessary, all combined to make their task a difficult and a tedious one.

The first expeditions to Sierra Leone, Accra, and Lagos directed their energies chiefly towards the elucidation of the life history of *Anopheles* and the discovery of an adequate means of destroying them at any of their stages of development as egg, larva or pupa.

Later expeditions, besides extending this work, have shown once more that native children are almost always hosts of parasites actively circulating in the peripheral blood, and that they thus constitute an ever present dangerous source of infection to Europeans.

As a result of this work two main prophylactic measures have been recommended to the Colonial Governments:—first, the segregation of Europeans at a distance of at least half a mile from native dwellings; and second, perfect surface drainage in the neighbourhood of European compounds.

The first and probably more important measure—since, from the nature of the country, it is often manifestly impossible to thoroughly remove all surface collections of water—has the, at present, almost insurmountable objections of expense and inconvenience Ultimately, however, it is still hoped that by gradual changes ideal conditions may be obtained in all the old-established stations and that new ones will be designed solely on this plan.

The second remedy is being most energetically enforced at both Lagos and Sierra Leone by the local Governments. Old pots, pans, bottles, anything capable of containing rain-water in fact, in which mosquitoes might breed, are removed from untidy streets and compounds. Roadside gutters with stagnant pools have been properly graded, puddles filled up, beds of streams levelled, and in short, standing water of any sort, unless adequately protected by gratings, has been wherever possible removed.

Although it is somewhat premature as yet to judge of the results, a recent report* shows a most gratifying decrease in the number of mosquitoes and apparently in the incidence of cases of malaria.

The results obtained by the "Mosquito Crusades" in Havana and the United States certainly demonstrate most strikingly that it is possible to almost absolutely prevent the breeding of mosquitoes in a definite area, provided sufficient individual care is used.

But it must be remembered that it is far easier to bring such an operation, requiring as it does the earnest co-operation of private persons, to a successful conclusion in the States or even Cuba, where the people are fairly intelligent and have, at least, no marked distaste to ordinary sanitary methods, than in a native African quarter, where the "street" becomes every man's slop-bucket.

Besides these two main rules, the School has advised further important changes in the ordinary life of Europeans on the coast based largely on customs which have been found necessary to the Englishman's well-being in India. It is an extraordinary fact that while the Anglo-Indian saves himself much discomfort and sometimes preserves his health by means of punkhas, airy rooms, gymkhanas and properly arranged mosquito nettings, the West African is often extremely negligent in such matters, and so frequently unnecessarily adds to the country's already sufficiently ghastly reputation.

Through the influence of employers at home and officials in the colonies, it is hoped that all these recommendations will be carried out, and that a healthier state of affairs will soon appear.

In considering these methods, it may seem strange to some that the rather short distance of half a mile should have been mentioned as the segregation limit, and that none of the generally vaunted culicides, particularly praised by the Italians, have been recommended. It has been proved, not once but many times, that the usual flight of *Anopheles* under ordinary circumstances does not exceed a few hundred yards. In the work of extermination of mosquitoes besides the general drainage methods mentioned above, kerosene and other culicides have been used, but none have proved altogether satisfactory from lack of either permanency or reliability.

---

* Progress Report : Thompson Yates Laboratory Reports, 1902.

At present, with our fairly perfect knowledge concerning the life history of the various hæmamœbæ causing malaria (the chief cause of death among white men in Africa), more attention is being directed towards the animal parasites more peculiar to the negro.

Some time ago Patrick Manson remarked that "the reign of the bacteria has reached its height; that of the Protozoa is just commencing."[*]

This, indeed, seems to be the cause, for almost weekly in the various journals articles appear attributing pathogenic action to all sorts of animal parasites. It is scarcely necessary to more than mention the various "cancer organisms" described by a multitude of writers, the leukæmia Protozoon of Löwit,[†] Dutton's Trypanosoma,[‡] or the lately described Pani Ghao[§] to exicte a wonder whether the animal parasites may not possess important, hitherto unsuspected, pathogenic potentialities.

It should at once be pointed out what peculiarly favourable conditions West Africa offers, by reason of its moist hot climate,[‖] for the development of the many animal parasites peculiar to man, or harboured by him in common with other vertebrates. Some of these parasites, as the hæmamœbæ of Malaria and Texas Cattle Fever, the filariæ of men and birds, and the Trypanosomata, require biting insects, such as mosquitoes, ticks or flies, as intermediary hosts; others, more particularly the intestinal parasites, pass through an extra corporeal stage in the warm, excreta-contaminated, African mud.

Some of the latter, for instance, *Anguillula intestinalis,* go through a distinct extra-corporeal alternation of generation before elaborating embryos capable of again entering a host;[*] while still other Nematodes, and many Cestodes, remain in a dormant resting stage until fortuitously ingested by either a primary or secondary host.

---

[*] Les Hæmatozoaires du Paludisme ; par Neveu-Lemaire, 1801. Page 1. Paris.

[†] Centralbt f. Bakt., 1898, Vol. XXIII.

[‡] Thompson Yates Lab. Reports, 1902.

[§] British Med. Jour., Jan. 25, 1902.

[‖] Parts of the West Coast have two rainy seasons annually.

[*] Notes sur les embryom de Strongyloides Intestinalis. Thompson Yates Lab. Reports. Vol. V. Part II. 1902,

Some recent observations, both in laboratory and clinical work, have made it almost certain that the power of entering the alimentary canal of their host by first penetrating the skin is possessed by at least one dangerous human parasite (the *Anchylostomum duodenale, Uncinaria duod.*), which causes a very fatal anæmia variously recognized as Egyptian chlorosis of bricklayer's anæmia.† It has been asserted that a somewhat similar power is possessed by the Guinea worm, one of the Filariae.

Enough has been said to show that if the West African towns can be raised to a standard of municipal hygiene which will require the removal of all stagnant water or decaying animal matter, which probably provide breeding places for disease-carrying insects, and will insist on the proper disposal of excreta in latrines, so preventing the ground in the neighbourhood of native lines from becoming a veritable culture medium for all manner of intestinal parasites, a very considerable reduction in the incidence of disease will follow, and the work of the Liverpool School will not have been altogether fruitless.

Thompson-Yates Laboratories, July, 1902.

---

† Loos, Centralbl, für Bakt., 1898, s. 441, u, 483; Centralbl. für Bakt., 1901, s. 733.

CASE REPORTS.

BY

W. S. England, M.D.,
Surgeon to the Winnipeg General Hospital.

Tuberculous Tumour, Involving Ileum and Cæcum.

I was called to see the patient, J.R., married, female, aged 35 years, in consultation, on the 19th of June, 1901, and found her complaining of a tumor in the right iliac region, also of attacks of pain in the abdomen with vomiting and dyspepsia.

The patient had always been a strong, healthy woman, previous to the beginning of these symptoms, some eighteen months ago. Her surroundings were good, living as she had been, on a large wheat farm. Only one cow was kept on the farm and it is said to be a healthy animal. There is nothing noteworthy in regard to her menstrual history. She gave birth to a premature child three years ago.

The family history is negative, there being no neurotic, tubercular, nor cancerous predisposition in her ancestors. Her husband is an active, healthy man.

About eighteen months ago, the patient began to be troubled with various symptoms of indigestion, such as flatulence, sour eructations, irregular bowels, pain in the episgastrium and vomiting. The vomitus consisted of copious quantities of fermented food and mucus. These symptoms gradually increased in severity and she lost flesh and at times was confined to her bed with nausea and vomiting. The abdomen became very distended at times, especially before these attacks of vomiting, which attacks also gradually became more frequent and violent.

Thirteen months ago (May 1900) the patient accidentally felt a lump in the right iliac region, when supporting her sides during the violent retching and vomiting acompanying one of these attacks. The lump was then said to have been nearly its present size, feeling about as large as a turkey's egg. There is no distinct history of any symptoms simulating an attack of acute appendicitis. She continued to lose flesh and suffer from the same symptoms, together with some constipation until February, 1901, when she submitted to an operation to secure relief.

Two incisions, each three inches long, were made, one in the linea alba below the umbilicus and the other directly over the mass. The physicans, however, did not attempt to remove the growth, but sutured up both wounds and the patient informs me that their diagnosis was cancer. However, later on, they advised the patient to seek further surgical interference in an eastern city, where there were better conveniences to cope with a major operative case, and the patient fell into my hands, through the kindness of Dr. Montgomery.

The patient is tall and slight, weighing about 103 pounds, her face is thin and somewhat anxious looking, but not cachectic in appearance, appetite poor, tongue slightly coated, bowels constipated, but yet easily regulated. The abdomen is rather flat and there is no distension of the stomach.

The hepatic dulness is normal. A hard even mass about the dimensions of a medium sized lemon can be easily mapped out in the right iliac region. This lump is movable to a limited degree and the patient only complains of slight tenderness on pressure, over and around it.

No enlarged lymphatic glands can be felt beneath the skin in the axillæ, groins or neck. Nothing abnormal can be felt per rectum or vaginum.

The heart, lungs, spleen and genito-urinary organs are, apparently, normal.

The temperature is 98 degrees F. pulse 72, respirations 20. We were unable to come to a definite diagnosis, but doubted the presence of cancer, owing to the slow growth and long duration of the trouble, without it having produced more evidence of its malignancy.

The patient having been prepared and everything at hand that might be required to deal with any condition found, we proceeded to operate on the 22nd of June, 1901. An incision was made through the old scar over the mass and extending two inches upwards, down through the abdominal parietes. The peritoneum was found connected to the underlying mass by bands, and the omentum was adherent at places. These were separated. The omentum ligated off and the growth exposed, when it was found to be one solid mass involving the appendix, cæcum, three or four inches of the ascending colon and several inches of the ileum. A small secondary growth was found encircling the lumen of the ileum, some twelve inches away from the primary growth. Also all the lymphatic glands in the mesentery, connected to that part of the bowel and extending down to its spinal attachment, were found enlarged and hard.

I proceeded to isolate the growth and ligated off the peritoneal attachments of the appendix, cæcum and colon for a few inches above its limits. I also ligated off all the affected mesentery down to its spinal anchorage, and separated it for some inches beyond the secondary growth in the ileum. The colon and ileum have been temporarily ligated by tapes were cut across and all the involved tissue removed. The ends of the bowel were thoroughly cleansed and then brought together by a Murphy's button. A row of fine silk suture was placed around the button between the two ends to reinforce it. The tapes were cut and removed. The divided peritoneum in the right lumbar region was sewed together over the kidney and the cut mesentery was brought together. The parts were cleaned and wiped dry and the parietes, sutured up, layer by layer.

The patient made an uninterrupted recovery. She suffered every little pain, only having had $\frac{1}{8}$ grain of morphine the night after the operation. She only vomited a very little and did not require a purgative, the bowels moving naturally on the fifth day following the operation. The bowels continued to move regularly until July 2nd, when she had a slight fœtid diarrhœa and on the 3rd, a skyograph was taken and the button was seen in the sigmoid flexure (11th day).

This continued until the button was expelled on the 14th day, after which time the bowels became regular and the fœtor disappeared. A considerable indefinite area of inflammatory tissue could be felt in the right iliac and lumbar regions, ten days after the operation, but this had considerably lessened in amount before the patient went home.

After the operation the pulse varied from 80 to 110, respirations 20; the temperature ranged between 98½ to 100 degrees F, until the button was passed, after which time it fell to 98 degrees F and remained normal or subnormal.

The patient was fed by nutritive enemata for some days, but on the 3rd day after the operation she took nourishment in small quantities by the mouth without pain or discomfort following. Soon she developed a good appetite and gained in flesh and spirits, leaving the hospital still a little weak, but feeling well, on July 9th, seventeen days after the operation.

Dr. Bell has kindly furnished me with the following pathological report:—

"The specimen comprises 18 inches of ileum and 4 of large intestine. Exactly at the junction of the two there is an irregular mass about the bulk of a tennis ball. The mesenteric glands immediately tributary to the part are enlarged to the size of hazel nuts, and matted together. The short, nearly three inch, appendix is three times its normal size, being much thickened and largely involved in the mass.

Some 9 inches up the small intestine there are 4 or 5 small grey nodules found in its wall, being arranged in the direction of the circumference of the bowel.

The ileo-cæcal opening is found to be very much contracted, it only admitting a small sized lead pencil.

Incision into the lumen of the bowel showed the mass to be densely fibrous with areas of necrosis scattered throughout, and a microscopical examination confirmed the diagnosis of tuberculosis.

There were abundant giant cells with caseation and fibrous proliferation.

The mucous membrane was not ulcerated.

The mass on section from the peritoneum to the mucous membrane was an inch in depth, the inflammatory thickening being most marked opposite the mesentery.

The appendix seemed to be pretty uniformly infiltrated throughout and the only secondary deposits in the intestine wall were those described as occurring some 9 inches from the valve.

The lymph glands were caseous in their centres."

Remarks.—The above condition is so rare that Frederick Treves, in considering tuberculous lesions of the bowels in his monogram on "Intestinal Obstruction," only cites one similar case, though less extensive, which was reported by Nothnagel in 1896. His case was first believed to be cancerous but proved to be tuberculous and lived three weeks after the operation for its excision.

Local Cerebritis of the First and Second Temporo-Sphenoidal Convolutions—Jacksonian Epilepsy—Aphasia—Trephined—Improved.

The patient was kindly referred to me by Dr. W. H. Brothers, who had kept the child under observation for the last three years. The child has been a great care to his mother, who has not been able to do much else but mind him, since he was a year and a half old.

When about eight months old—November 1896—the patient's mother noticed a thin watery discharge coming from the left ear, which continued about two weeks.

In January 1897, when about ten months old, he had a convulsion which lasted about three minutes, the convulsive movements being general. The child had a second similar convulsion in March, 1897, and a third in May, 1897.

In July 1897, the patient had three convulsions in one day. These were similar in character, but more severe. From July to December 1897, similar convulsions occurred, but they were more frequent, the patient having one or two a week. At times the child would momentarily lose consciousness and suddenly fall down without having any convulsive movements.

The mother states that during this time there was no discharge from the ear, but that the child seemed to suffer from pain in the left ear before taking a convulsion.

During January, February and the first week of March, 1898, the convulsions became very frequent, the child sometimes having as many as ten convulsions in a day ; but the convulsive movements were unilateral and confined to the right side of the face, the right leg and arm. The child always lost consciousness with these convulsions, but they were only of short duration, and he did not appear to suffer before these attacks.

The patient had had no convulsions since March 1898, but since that time has been forcibly grinding his teeth at very frequent intervals, both night and day, and has been very restless and irritable.

Following the last convulsion was a free purulent discharge from the left ear, which lasted about a week, when it lessened, but in about two months it re-appeared. This free purulent discharge continued in this way until March 1899, since which time the ear has discharged pus at less frequent intervals until January 1901. There has been no discharge since this date.

In February 1898, after the convulsions had been very frequent and severe for three weeks there was marked paresis of the right arm and leg. This gradually improved, but the child continued to have an unsteady and shuffling gate of the right leg until December 1900.

The child was very bright and active when a year and a half old, and understood what was said to him. He could say many words, such as "Mamma," "Papa," "Pussy," etc. When asked what any familiar animal said he would immitate its sound. He could say, "I won't; don't lie down," etc.

The boy was in very poor health and did not thrive much until two years ago, since which time he has grown very rapidly. During this time, also, he has been most unmanageable, when awake being constantly on the run and into all sorts of mischief, keeping one constantly employed to control him. His mother says he understood what he was doing, and largely what was said to him, but would only mind when he felt so disposed.

In November 1900, the right patellar reflex was exaggerated ; the left was normal.

There is no neurotic history in the family. The father and mother are living and healthy. His brothers and sisters are all bright and active, and able to talk. The child's general condition is good. He is rather tall and slight of build ; appetite good ; bowels regular. None of the thoracic or abdominal organs show any evidence of disease. Pulse 96. Temperature 98° F.

PRESENT CONDITION.

The child is very restless and irritable, frequently grinding his teeth. His gait at present seems steady, and he is constantly on the go. The right patellar reflex is absent; the other reflexes are apparently normal. The child looks sensible and bright. His first move on entering the ward is to secure my watch, which he immediately puts to his good ear, and looking up says: "tic-tic" repeatedly. When the watch is placed against his left ear he will hold it there for a short time, but soon changes it to the right ear and again says "tic-tic." The left middle ear is practically gone. His vision is apparently good, but the discs are pale. There is no optic neuritis.

He makes loud grunting and mumbling sounds, but his mother is unable to understand him. There is no paralysis of the face or tongue. He understands largely what is said to him, but does not always obey. He understands the use of common articles, which he has been accustomed to, *e.g.*, I gave him a hair brush and he immediately began brushing his head, but suddenly stopped as it had been shaven. He took the curling tongs and began curling his mother's hair. He frequently takes a club to one of his brothers if he is annoyed.

His perception is very acute. When at home he was accustomed to coal oil lamps for light. These he frequently lighted himself. The first evening when in the hospital he saw his mother turn on the electric light over the bed. In an instant he was on top of the bed, and turned on and off the light a few times, then left it apparently satisfied, and smiled.

He readily manifests his likes and dislikes.

When he is hurt he cries, and when pleased he laughs or smiles. But he can not talk or name objects although able to make sounds.

The parents are anxious for an operation to see if anything can be done to relieve the child's restlessness, even though no improvement in speech should follow.

The lesion was considered to be one involving the 2nd or 3rd left temporo-sphenoidal lobe, and perhaps an old encysted abscess following the otitis media.

The patient having been previously prepared on February 25th, 1901, I proceeded to reflect a flap of the scalp and cranium, by knife and chisel, downwards, to expose the left temporo-sphenoidal lobe as well as the lower part of the supra-marginal and angular gyrus. On reflecting the scalp downwards a large plexus of veins was found between it and the pericranium running downwards in front of the left ear. A small trephine hole was made five-eights of an inch above and a little behind the external auditory meatus. There was no bleeding from the diploë. A horse-shoe-shaped flap of bone was chiselled around from here, extending upwards, forwards, then downwards. No blood oozed from the bone excepting at the most superior part in the parietal bone where a little flow came from one point. The bone was found about 3-16th of an inch thick, and it was compact throughcut, the diploë being practically absent or only rudimentary. The bone appeared very fibrous in structure, and readily tore on prying up the edge with the chisel. The flap of bone was broken over and turned down. On incising the dura mater, which was decidedly thickened, no hæmorrhage occurred when cutting the large branches of the middle meningeal artery across.

The brain completely filled the cranium, and pulsation in the supramarginal, angular gyrus and first temporo-sphenoidal convolutions was very strong.

Pulsation in the second temporo-sphenoidal lobe towards the front part was less forcible though present and still less marked in the third. The apex of the third temporo-sphenoidal lobe, especially on its undersurface, seemed soft to the touch and did not pulsate. The anterior surface of the petrous bone seemed abnormally uneven and elevated.

The second and third temporo-sphenoidal convolutions were explored in many places, and the first temporo-sphenoidal, angular gyrus and supra-marginal convolutions once each. No fluid escaped from the interior of the brain, excepting a little blood-stained serum.

A silk-worm gut drain was placed beneath the apex of the temporo-sphenoidal lobe and brought out at the trephine hole. The dura was sutured with cat-gut, and strips of bone having been broken off the upper and front part of the reflected bone it was replaced in position. A similar drain, also, having been inserted between it and the dura, the scalp wound was brought together by silk-worm gut, and an antiseptic dressing applied.

The patient made an uninterrupted recovery as far as the operation was concerned.

The pulse ranged between 90 and 100; the temperature on one occasion reached 100 2-5° F., but generally it was 98° to 99° F.; the respirations were 24 per minute.

The wound was dressed on the 26th February, when a few strands of the drain were removed. It was again dressed March 2nd, when more strands of the drains were removed. March 7th all the sutures were removed and the remainder of the drains, the scalp being firmly united excepting at the drainage opening. The last dressing was applied this date.

Since the operation the child has taken his food well and shows no evidence of damage from the operation. He appears quieter and does not grind his teeth so much, otherwise there is no improvement.

Remarks:—In all probability the pathological changes which have been going on in this case since the child was less than two years old are of the following nature:

A septic otitis media with infection of the dura mater in front of the petrous bone; chronic meningitis in this region, and extending around for about two inches, with occlusion of the middle meningeal artery close to the foramen spinosum. The undeveloped bones of the cranium in this region having lost their blood supply through this artery the diplöe was not developed, but remained rudimentary. The bone developed principally from the pericranium and compensatory veins formed between it and the scalp. The inflammation extended through the dura and a localized cerebritis of the anterior part of the third temporo-sphenoidal lobe followed, which cerebritis also implicated the front part of the second temporo-sphenoidal lobe, but to a much less degree.

This resulted in a non-development of this area of the brain which presides over the power of making words or naming objects.

Whether the relief of intracranial pressure and an alteration in the circulation over this area from the drainage, and removal of bone, will be of any decided benefit to the child or not it is impossible to say at present. The child is to be referred to me again in six months, when, if there is no decided improvement, I shall trephine and explore the anterior surface of the petrous bone, and the tip and undersurface of the third temporo-sphenoidal lobe from in front and below.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Extirpation of the Prostate.

Freyer, P. J., "Total Extirpation of the Prostate for Radical Cure of Enlargement of the Organ." *Brit. Med. Jour., July 20, '01, Feb. 1, and July 26, '02.*

In the removal of the prostate by Mr. Freyer's method, the organ is enucleated in its capsule from the surrounding sheath, and then stripped off the urethra, which, with its enveloping tissues is left intact. The author describes the true capsule of the gland as being altogether separate and different from the sheath, which is formed from the pelvic fascia, numerous connecting bands passing between the two. In the space between these two capsules lies the prostate plexus of veins, particularly above and at the sides of the gland; these veins in subjects of enlarged prostate are frequently of enormous size. The larger branches of arteries also lie between the true capsule and the sheath, small branches passing from them into the gland substance.

The operation consists in opening the bladder suprapubically catching up the mucous membrane with forceps, incising it, and the enucleation of the gland by the finger above, no instruments being used. A finger in the rectum pushes the gland forward, bringing it more within reach of the finger, and eventually, when the gland is detached from the sheath, pushes it into the cavity of the bladder. As the lateral lobes of the prostate enlarge they bulge out and have a tendency to become more defined and isolated, each being contained in its own capsule. They separate and become more or less loose from the commissures, and tend to return to the separate condition found in early fœtal life. The urethra and ejaculatory ducts are left intact when the lobes come away separately. When the lobes are not detached from each other along the inferior commissure, the author cannot say as to whether the ducts remain intact or are torn across.

In enucleating the prostate out of its sheath, the fibrous bands that pass between the sheath and the capsule are torn through, but the prostatic plexus of veins and the large arteries are left behind. This accounts for the trifling hæmorrhage which takes place in this operation, as compared with the severe bleeding which follows other methods of total or partial removal of the gland. The large cavity left after enucleation rapidly contracts, and after irrigation with hot lotion to control bleeding, the finger in the bladder scarcely detects any cavity whatever. One of the remarkable features of this operation is the complete restoration of the power of voluntary micturition after habitual catheterism may have been employed for lengthened periods.

Mr. Freyer has operated by this method in fourteen cases. The patients' ages varied between 52 and 76. The majority were old cases with all the complications usually found in those who have had to use the catheter for years. One patient died on the 22nd day after operation, of acute mania; the remaining thirteen made excellent recoveries, are able to retain their urine and pass it freely without the use of a catheter. In three cases the author could not detach the gland from the urethra, and, consequently, was obliged to tear this structure across. Although these cases suffered severely from shock, they made good recoveries and had complete control of the bladder.

The Surgical Treatment of Ascites.

MONTGOMERY, W. P., "On the Surgical Treatment of Ascites." *Medical Chronicle, April, 1902.*

When, in cases of cirrhosis of the liver, the ascites has reached such a degree that tapping is necessary, the patient seldom survives the operation for any length of time, and but rarely will removal of the fluid be called for a second or third time, the patient succumbing to the primary disease before the abdomen has again become distended with fluid. Dr. Hale White is of opinion that any patient who survives to have several tappings performed may possibly have cirrhosis of the liver, but that other complications are present as well. He cites ten cases which were considered to be cirrhotic and in which many tappings were done. In nine of these chronic peritonitis and perihepatitis were found post mortem. In such cases we may infer that the formation of adhesions has assisted in the development of a temporarily curative collateral circulation. Examination post mortem of cases of cirrhosis which have survived tapping for any length of time shows, either that the viscera (abdominal) are connected with the parieties of vascular adhesions, or that the normal anastomoses between the visceral and parietal circulations are very markedly increased in capacity.

These vascular communications are:—

(1). The subperitoneal hepatic plexus between the folds of the broad ligament connecting the portal with the phrenic and azygos veins.

(2.) The round ligament vein connecting the left portal with the epigastric.

(3.) The coronary veins anastomosing with those of the œsophageal plexus.

(4.) The inferior mesenteric communicating with the middle and inferior hæmorrhoidal plexus of the iliac.

Talma has published the results of autopsy in three cases of cirrhosis in which ascites had been present but had disappeared before death. Each of these showed extreme enlargement of the collateral circulation, the vein of the round ligament in one case being as thick as the little finger. Any operative measures in these cases have been opposed by those who attribute the ascites to a general toxæmia resulting from the inability of the diseased liver to absorb and destroy alimentary toxines, and, consequently, that any enlargement in the anastomotic circulation would do actual harm by increasing the facilities for the direct passage of these poisons into the general circulation. Against this view it may be urged that, even if the ascites be of toxic origin, the operation may be of benefit by relieving the portal circulation and so allowing the liver to deal more efficiently with the blood passing through it. Again, if the ascites were due to a general toxæmia, one would expect to find other serous membranes involved.

The operation consists in aiding the development of the collateral circulation through the agency of peritoneal adhesions. The omentum may be sutured:—(*a*) to the parietal peritoneum alone; (*b*) it may be fixed under the skin of the abdominal wall; (*c*) it may be sutured between the liver and the diaphragm; or (*d*) the parietal peritoneum may be separated from the muscles around the abdominal incision and the momentum grafted into the prepared surface. The incision is made preferably above the umbilicus, so as to avoid wounding the vein of the round ligament.

The author reports two cases. The first was that of a woman aged 50 years who had noticed increasing enlargement of the abdomen during eight months, and who had been tapped three months previously. The fluid soon reaccumulated. A four-inch incision was made in the right semilunar line and the liver exposed. The organ was enlarged, congested, and had a rough granular surface. The omentum was tacked to the peritoneum on either side of the incision, after the surface of the liver had been rubbed with a sponge, and was then folded up between the liver and diaphragm, and fixed to the liver capsule by a single suture. One month after operation there seemed to be some accumulation of fluid, but a steady diminution then began and six months afterwards there was no trace of ascites.

The second case was that of a man aged twenty-six years, whose disease was looked upon as being chronic peritonitis and possibly cirrhosis. He had been tapped on 42 occasions. An operation similar to the preceding one was performed. Since then the patient has suffered a good deal from bronchitis and still requires tapping. The abdomen fills up much more slowly than it did before the operation.

The author has collected sixteen cases which were available for treatment, and which added to the series collected by Packard and Lecoure give a total of thirty-eight cases with the following results:—

Deaths, 10, or 26.3 per cent.
Unimproved, 9, or 23.6 per cent.
Improved, 4, or 10.5 per cent.
Recovered, 15, or 39.5 per cent.

As to the cases suitable for operation, opinions differ. Talma states that the cirrhosis must be primary and not secondary to a condition such as chronic peritonitis with serous effusion. Dr. Hale White, on the other hand, is of the opinion that it is in these very cases of chronic peritonitis with cirrhosis that the best results are to be obtained. As a matter of practice, it is difficult to distinguish between pure cirrhosis and cirrhosis with chronic peritonitis.

E. J. Semple.

Obstetrics.

UNDER THE CHARGE OF WILLIAM GARDNER.

The Ophthalmias of the Newly-born and their Prophylaxis.

PINARD., "The Ophthalmias of the Newly Born and their Prophylaxis." *Annales de Gynéc et d'Obstet., Jan., 1902.*

The author states that the statistics of all lands still show that purulent conjunctivitis is the most frequent cause of blindness. Bacteriological research has materially increased our knowledge of the ophthalmias of the new-born. Pinard holds that while the gonococcus is the direct cause of infection in the majority of cases, other pathogenic agents may produce conjunctivitis, such as the streptococcus, Loeffler's bacillus, staphylococcus, pneumococcus, etc. Therefore he prefers to speak of purulent ophthalmias of the new-born instead of purulent ophthalmia of the new-born.

According to Frænkel the order of frequency in the ophthalmias of the new-born is gonococcus, pneumococcus, the bacillus of Koch and Weeks, the diplobacillus of Morax and Axenfeld, the bacillus coli, the bacillus of diphtheria, a variety of diplococcus intracellularis, the meningococcus intracellularis. He considers that the conjunctiva of the newly born shows a marked predisposition to infective inflammation.

He distinguishes between primitive ophthalmia and secondary ophthalmia. Primitive ophthalmia arises from infection at the time of birth or immediately before. Secondary ophthalmia develops between the sixth and twelfth days or even later, and is due to the environment and carelessness of the nurse. The ideal prophylaxis is to absolutely prevent the infective micro-organisms from reaching the child's eyes before, during, or after its birth. Unfortunately this ideal is not always attainable, and therefore a certain percentage of ophthalmia will probably continue to present itself.

The problem resolves itself into the complete disinfection of the genital canal of the mother before labour, and the disinfection of the eyes of the infant at birth. This was first advanced by Crédè, in 1879. He found that in cases of women infected with vaginitis, antiseptic douching before labour diminished the number of cases of ophthalmia but slightly. Therefore a two per cent. solution of silver nitrate is dropped into the eyes of the new-born in addition to the prophylactic douching of the mother. Under this treatment the number of cases of ophthalmia has been reduced by one-half.

Schröder obtained good results by using a 1 to 5,000 solution of sublimate in place of silver nitrate. Koltenhoch and Abfeld have abandoned antiseptic instillations, employing sterile water or alcohol for this purpose. Budin, at the Clinique Tarnier, now uses weak solutions of nitrate of silver. Champetier de Ribes employs a 1 or 2 per cent. solution of silver nitrate followed by a wash of weak permanganate of potash. Between 1896 and 1898 his percentage of ophthalmia cases varied between 0.70 and 1.68.

The author of the Clinique Baudeloque has made use of nitrate of silver, biniodide of mercury, 1-4,000, lemon juice, citric acid 5 per cent., permanganate of potash, and recently a solution of aniodol. In ten years he had 131 cases of primary ophthalmia and 91 cases of secondary ophthalmia. He thus concludes that the employment of different antiseptic methods directed towards asepsis of the genital canal at labour, combined with asepsis of the conjunctival sacs of the infant, at birth and during the three weeks that follow, have diminished the number of purulent ophthalmias considerably. As he puts it, to paint a picture requires more than a canvas, paint and brushes; so also it requires more than antiseptic agents to produce antisepsis. Thus, whatever the antiseptic agent employed, cases of ophthalmia still occur and will continue to do so.

The curative treatment, to give good results, must be applied early. Since 1894 he has employed irrigations of permanganate of potash solution for this purpose. Pinard considers that curative treatment should always be carried out under the supervision of ophthalmic surgeons, and advocates that every large maternity should have at least one such specialist on its staff, charged with the direction of the curative treatment of purulent ophthalmias and the teaching of this branch to students and nurses.

Pregnancy after Removal of the Ovaries.

DORAN, ALBON. "Pregnancy after Removal of both Ovaries for Cystic Tumour." *Jour. of Obstet. and Gyn. of the British Empire, Vol. II., No. 1.*

The writer removed a cystic tumour of the right ovary fourteen years after a similar growth on the left side had been removed. The patient not only menstruated regularly after the second ovariotomy, but bore a child to term two years after the second operation. The operator at the second operation found the stump of the ovary, removed fourteen years before, reduced to a small tubercle.

He concludes that he must have failed to include the tube in his ligature at the base of the tumour of the second operation, and that some ovarian tissue must have been left behind.

He collected nine other cases where pregnancy is reported to have followed double ovariotomy. In his analysis of the reports of these cases he shows the possibility that in all portions of ovarian tissue may have been left behind. He also makes a study of cases of pregnancy following ligature, and even section of the Fallopian tubes, and concludes that in these cases the ligature loosens, or else it ulcerates through the tube, which heals behind it without complete stricture of its canal.

Thyroid Extract in Eclampsia.

Nicholson, H. Oliphant. "On the use of Thyroid Extract in Puerperal Eclampsia and in the Pre-Eclamptic State." *Ibid.*"

Nicholson has advanced the view that "inadequacy of the maternal thyroid system" is related in some way to the occurrence of puerperal eclampsia. He cites the well-known fact that in normal pregnancy the thyroid gland is enlarged, and states (without giving authority) that the enlargement can be diminished or prevented altogether by the administration of thyroid extract.

It being accepted that eclampsia is the result of auto-intoxication, this condition being the result of incomplete metabolism with subsequent imperfect excretion, he considers that iodothyrin is essential to the efficient working of all of the various metabolic organs of the body. Its exhibition is followed by marked stimulation of the metabolic processes and a striking increase in the excretion of urea. In brief, the writer's view is that eclampsia is the result of the arrest of the metabolism of nitrogenous substances at a stage when those are highly toxic due to a deficiency of iodothyrin. He considers that the symptoms of eclampsia resemble those of complete experimental athyroidea. Iodothyrin, he suggests, exerts some specific action on the kidney, that the presence favours the formation of urea, a most powerful diuretic, and that the vasodilatation produced by iodothyrin tends to promote renal activity.

Thus the thyroid and suprarenal secretions, as far as their action upon the arterial calibre is concerned, are antagonistic. In all conditions of athyroidism the arteries are found to be unduly contracted. He has suggested that the unopposed action of the suprarenal secretion, bringing about spasm of the renal vessels, might be one of the factors which lead to the arrest of the renal secretion so common in eclamptics.

Thus he considers "that the degree of the toxæmia of pregnancy comes to be dependant, directly or indirectly, upon the quantity and activity of the thyroid secretion. The thyroid gland may therefore be given a primary rôle in the causation of eclampsia.

He also favours the use of large doses of morphine in eclampsia as an adjunct to the thyroid treatment. Morphine acts by inhibiting metabolism, thus stopping the formation of poisons. A large dose (1-3 to 1 grain) produces profound effect upon the circulation, and by relieving arterial spasm it promotes diuresis and often profuse sweating. He considers the fact that morphine controls the nervous phenomena of eclampsia is of secondary importance. He refers to the beneficial action of saline effusions in eclampsia as being brought about by an " enlargement of the arterial calibre." The rationale of its action is thus the same as in the morphine and thyroid treatment, relaxation of the blood vessels resulting in diuresis.

He considers that iodothyrin brings about good results in eclampsia merely through the circulatory phenomena it produces, and that it also has some indefinite specific action, which, by favouring metabolism, counteracts the effects of intoxication.

He usually administers the drug in the form of 5 grain tablets, giving from three to ten or more daily.

He records a case of eclampsia in a primipara at the beginning of the eighth month. The treatment was by one dose of morphine after the first fit and subsequently by thyroid extract. The patient recovered, and all the symptoms disappeared. In a subsequent pregnancy she took the tablets daily and no eclamptic symptoms developed. A primipara aged twenty-three in the seventh month had typical pre-eclamptic symptoms. She was put on thyroid extract and all the symptoms disappeared. The child, however, was born dead. He also reports a case of puerperal albuminuria which was cured by the administration of thyroid extract.

Dystocia Due to Short Cord.

Brickner, Samuel M., "A New Symptom in the Diagonsis of Dystocia due to a Short Umbilical Cord." *Amer. Jour. Obstet., April, 1902.*

The author draws attention to two conditions which, in his opinion, indicate absolute or relative shortness of the cord, when present in cases of delay in the second stage of labour.

The bladder in the second stage of labour is pulled up above the pubes, and the urethra is elongated as a result. During a pain, the head in the second stage compresses the urethra and base of the bladder against the symphysis, and when there is relative or absolute shortness of the cord, the head is pulled back in the intervals between the pains, thus releasing the urethra and bladder from pressure, and at this time, according to Brickner, several spurts of urine escape from the urethra. This escape of urine in spurts just at the cessation of a pain is a sign of the cord being short.

He also draws attention to the escape of bright arterial blood (?) during and between the uterine contractions, as well as to pain at the site of the placenta. Two cases are reported in full where all these symptoms were present. In one case the umbilical cord measured only ten and a half inches, while in the other the cord of ordinary length was found coiled twice around the neck and once around the left shoulder.

The author thus summarizes the diagnostic points indicating dystocia due to short cord:—

(1.) Recession of the head in the intervals of pain.

(2.) Urination in small quantities in the intervals of pain after the establishment of the second stage.

(3.) Arterial bleeding during and between contractions.

(4.) Pain over the placental site especially, during a uterine contraction, during the application (traction) of the forceps.

(5.) A desire of the patient to sit up.

(6.) Uterine inertia.

Massage of the Breasts during Lactation.

Bacon, C. S. "Massage of the Breasts during Lactation." *Amer. Jour. Obstet., June, 1902.*

The author believes that the method of applying massage to the breasts as described in the ordinary text-books of obstetrics is faulty in principle and leads to disastrous results.

The error lies in the direction recommended in most text-books, that is, in that all stroking or rubbing of the breast should be practiced in the direction of the nipple, or from the base to the apex of the gland, the object being to empty the lactiferous ducts. The author claims "that there is no more proof that retention of milk causes mastitis, than that secretion of milk causes milk fever. Milk never curdles in the milk tubes."

He considers that "caked" or "hard" breasts result from congestion, where there is no infection and resulting inflammation area.

The milk is not formed during the intervals between nursings, as is generally supposed, but at the time of nursing. The process of secretion of milk is quite the same as similar processes in other secreting glands. He concludes "that while it is probable that a certain quantity of milk is stored up in the breast before nursing begins, perhaps from one drachm to one or even two ounces, yet the greater part of the milk obtained by the child at one nursing is produced during the nursing." The painful swelling of the breast is due to the temporary overfilling of the blood and lymph vessels. The object of massage is to relieve these vessels.

The author briefly reviews the arrangement of the blood and lymph vessels of the breasts. The blood is derived from the axillary and subclavian arteries by branches which pass downward and inward under the breast, accompanying the ducts to their ultimate ramifications. The capillaries form a fine network around the acini and empty into the venous radicles in the centre of the smallest lobules. The venous trunks from the lobes unite to form a ring below the outer margin of the nipple, into which the veins from the nipple also empty. From this ring large venous trunks pass downward, outward, and upward, one set emptying into the axillary, and the other into the subclavian vein. The lymphatic system of the breast, he points out, begins as a system of spaces between the acini and their surrounding network of capillaries. These empty into canals extending through the centre of the lobules, along the milk ducts, and ultimately unite into trunks, which parallel the venous trunks and empty into the subclavian and axillary ducts and glands. Therefore, massage of the breast, to be of any value, must begin in the axillary and subclavian regions.

The technique recommended is about as follows:—The operator should be seated at the side of the bed opposite to the breast to be treated, that is, on the right side of the bed to massage the left breast. The patient should lie on the side not treated, near the edge of the bed, her shoulder and neck being well supported by pillows. The arm of the side to be treated should be somewhat extended and supported on pillows. The breast as well as the nurse's hands should be thoroughly clean; a lubricant is desirable.

The massage is begun by gentle stroking and rubbing, using the tips of the fingers in a circular motion, up and down in the axilla and under the clavicle. The pressure is gradually increased until the skin is moved with the fingers as in deep massage. As the excursions are made longer and longer, the walls of the axillary space, its anterior border, and the pectoralis major, are well kneaded. One hand is then employed along the anterior border while the other is at the upper border of the breast. Now, besides the tips of the fingers, the palms and ulnar edges of the hands, as well as the balls of the thumbs, are employed. The position of the patient enables the operator to get well under the outer border of the breast.

The gland itself may now be massaged if the treatment has not already relieved the engorgement, as is often the case. In this case the object is to relieve the veins and lymph vessels and not to empty the milk ducts. The above outlined method having emptied the efferent trunks, to empty the veins and lymph vessels of the breast itself, the manipulations must be directed towards the nipple. The gland is massaged by a stroking movement of the fingers, at first very light, and later deep, and deeper, the effort being made to surround the lobes with the fingers. The strokings are not carried to the nipple, but only to the outer border of the areola. Here centripetal strokings are substituted by a circular rubbing. This massage of the gland is combined all the time with the manipulation on the outside of the gland as previously described.

D. J. Evans.

Reviews and Notices of Books.

HANDBOOK OF BACTERIOLOGICAL DIAGNOSIS FOR PRACTITIONERS, including instructions for clinical examination of the blood: By W. D'ESTE EMERY, M.D., B.Sc., Lond., Lecturer on Pathology and Bacteriology in the University of Birmingham. London, H. K. Lewis, 136 Gower St., 1902. Price 5s. 6d.

This small book, forming one of "Lewis's Practical Series," is of undoubted value to the class to whom it is addressed—the practitioners. Many a man finds himself, although quite competent to make the simpler forms of bacteriological diagnosis, unable to do so, from his inability to prepare the needed culture media and stains; and it is the privilege, only, of the city practitioner to be able to obtain these when needed. Here we find directions so simple that no one can fail to follow them correctly, and yet the needed precautions against contamination and the practical difficulties met with in the laboratory are carefully set forth. Following this chapter on technique is one on the diagnosis of the various diseases to which, so far, these methods can be applied. Here, again, the directions are most simple and explicit, and under each of the diseases noticed is a short paragraph entitled "interpretation of results," in which both positive and negative results are discussed and the liability to errors estimated.

A third chapter is concerned with the "collection and examination of certain morbid materials." These include pathological exudates, the technique of lumbar puncture and examination of the fluid, and examination of the blood, both fresh and stained. Two good coloured plates of the more common organisms and many cuts in the text illustrate the work.

We can confidently recommend the book, which, although not a proper text-book for students, excellently fulfils the purpose for which it is intended.

ECZEMA: By L. DUNCAN BULKLEY, A.M., M.D., Physician to the New York Skin and Cancer Hospital, etc. 354 pages, New York and London, G. P. Putnam's Sons. Cloth, $1.25.

In contrast to many recent works in dermatology, which are copiously illustrated, the present small monograph comes to us without illustrations. The book is a comprehensive discussion of the nature, etiology, diagnosis and treatment of eczema, and gives statistics of 8,000 of the author's cases, both public and private, relative to the occurrence, frequency, and duration of the disease. The following fact is evidenced by the statistics,—that the disease shows very little hereditary tendency. It is hard to accept this conclusion definitely, since eczema is a disease which a patient does not always reveal to his relatives, and very little accuracy can be possible if one only takes the testimony of the patient himself with regard to the existence of the disease in others.

The author outlines the etiology from a broad standpoint, making the disease of a constitutional nature, and opposes the theory of a specific parasite, except, perhaps, in eczema seborrhoicum. In the chapter on diagnosis, twenty-seven separate skin affections are discussed, which may simulate the various forms of eczema, and the differential characteristics are given. The discussion of treatment is perhaps the best part of the work and will repay a careful study. He advocates treatment, systematically and locally. "Eczema is a disease of lowered vitality, general and local, and the aim of treatment is to restore vital tone to the system and to the integument affected."

E. S. H.

THE HEALING OF NERVES: By CHARLES A. BALLANCE, M.S., F.R.C.S., Assistant Surgeon to St. Thomas' Hospital, and PURVES STEWART, M.A., M.D., F.R.C.P., Assistant Physician to the Westminster Hospital. Illustrated by 16 plates and one figure in the text. London, Macmillan & Co., Limited.; New York, The Macmillan Company, 1901. Price, 12c. 6d. net.

This is a most interesting, instructive and readable book. The authors have performed experiments on animals and have had opportunities to examine a few cases of nerve division in man. Their work is largely histological, the conditions found at stated intervals being very clearly and tersely described. The reader is thus made familiar with the histological condition of the proximal and distal ends of divided nerves, of nerves divided and immediately sutured, of the ends of nerves joined to an intervening graft, and likewise of the changes which take place in the graft. The work done has been of a very high order.

To the operating surgeon the insertion of a few clinical cases gives added interest. In one instance, one of the authors inserted two inches of a sheep's sciatic nerve into the gap between the retracted ends of an ulnar nerve, divided eleven months before at the battle of Colenso. There was some evidence of sensation twenty days later; two months after operation a pin prick could be felt over the ulnar area; six months after operation the anæsthesia had entirely disappeared, although the motor functions were still imperfect.

In speaking of the graft, the authors state that it is a dead tissue, and is absorbed and replaced by a living tissue. The neuroblasts are not from the graft, but are to be numbered from among the cells which invade and replace the graft from the distal as well as the proximal segment.

The last chapter deals with the "neuron theory."

A MANUAL OF THE PRACTICE OF MEDICINE: By GEORGE ROE LOCKWOOD, M.D., Professor of the Practice of Medicine in the Woman's Medical College of the New York Infirmary. Second Edition, Revised and Enlarged, 8vo., 847 pages, 79 illustrations and 20 full page plates. Philadelphia and London, W. B. Saunders & Company, 1901. Canadian Agents, J. A. Carveth & Co., Toronto, Ont. Price, $4.00 net.

This work, which has recently been largely rewritten, presents the principle and practice of medicine in a clear and concise manner. It is valuable as a supplement to the larger works, in that it is compact and that special attention has been paid to bringing forward the points essential in treatment.

The section on the digestive system, covering 169 pages, is a valuable feature of the work. It includes gastritis, dilatation of the stomach, gastric atony, ulcer of the stomach, gastric neuroses, enteritis and colitis, gastroptosis, gastric analysis and Reichmann's disease. The article on malaria is short and comprehensive, but would be more valuable were it provided with illustrative plates of the blood. The illustrations and charts are well chosen.

We can recommend the book to those wishing an up-to-date work handy for reference.

SAUNDERS' MEDICAL HAND-ATLASES—Atlas and Epitome of Operative Surgery. By DR. OTTO ZUCKERKANDL, Privat-Docent in the University of Vienna. Second Edition, Revised and Enlarged. Authorized Translation from the German. Edited by J. Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery in Jefferson Medical College, Philadelphia. W. B. Saunders & Company, New York and London. Canadian Agents, J. A. Carveth & Co., Toronto. Price,

This is a compact handbook of over 400 pages. The matter is put clearly but necessarily in a terse and concise manner. No space is given to the discussion of vexed questions. One or several opinions or procedures are mentioned, and the reader is left great latitude in selecting whichever he prefers.

The illustrations are good and generously supplied. There are 40 coloured plates and 278 illustrations in a book of 410 pages. For students, it is certainly a useful and reliable handbook. For general practitioners, it is a very convenient little book, that can be referred to very readily; and the numerous illustrations make plain a good deal of the text at a glance. It is certainly one of the best in its class. The publishers' part has been well done. The book is of convenient size and worthy of confidence.

OPERATIVE SURGERY.—By JOSEPH D. BRYANT, M.D., Professor of the Principles and Practice of Surgery, Operative and Clinical Surgery, University and Bellevue Hospital Medical College. Vol. II. Operations on the Mouth, Nose, and Œsophagus, The Viscera connected with the Peritoneum, The Thorax and Neck, Scrotum and Penis, and Miscellaneous Operations. 827 illustrations, 40 coloured. New York, D. Appleton & Company, 1901.

It is coming to be recognized that operative surgery cannot be satisfactorily treated in the ordinary text-book on surgery. Many of the later text-books give scant space to the technique of operations.

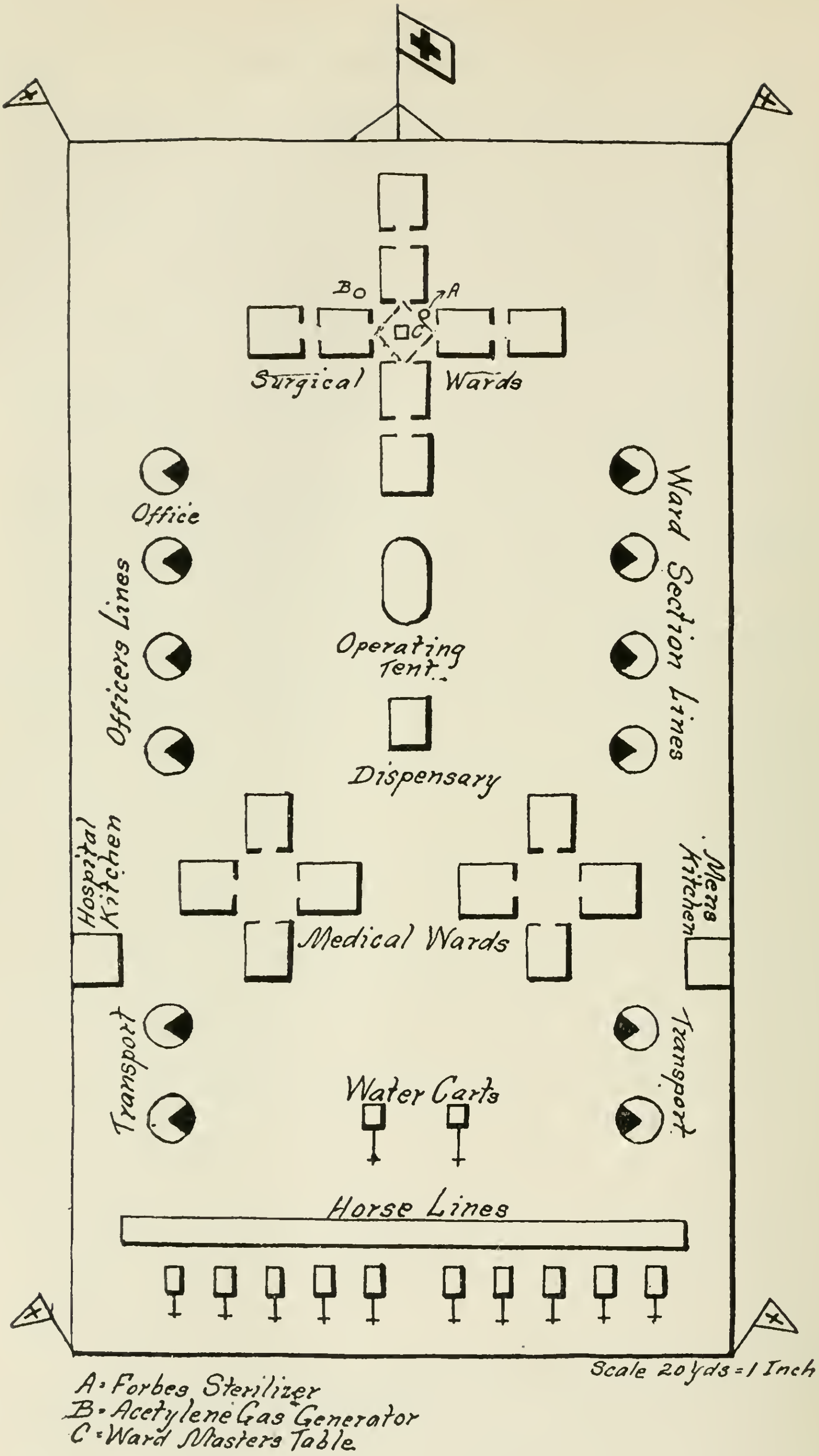
Bryant's Operative Surgery is taking a very high rank in its class. Not only is technique given in detail, but a brief *résumé* of the anatomy of the field of operation precedes the description of the operation itself in most instances. The second volume is quite up to the high standard of the first. The different methods which may be adopted for a given condition are outlined with sufficient detail to be readily understood, and very often the author gives the reader the benefit of his large experience in a judicial review of their respective merits and adaptability to varying circumstances. The present volume is remarkably well up to date. The illustrations are numerous and clearly bring out the meaning of the author. In the two volumes the general surgeon, as well as the general practitioner, who operates occasionally, will find a work of ready reference giving the generally accepted methods as used by the leading surgeons of to-day.

PROGRESSIVE MEDICINE: A Quarterly Digest of the Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., assisted by H. M. R. LANDIS, M.D. Vol. I. March, 1902. Lea Brothers & Co., Philadelphia and New York.

In this volume the surgery of the head, chest and neck are taken up by Charles H. Frazier, M.D., Professor of Clinical Surgery in the University of Pennsylvania. He confines himself largely to an enumeration of the advances made during the past year, and a statement of the views generally accepted at the present time on the more important points. The article is of very great interest. The paragraphs dealing with chronic hydrocephalus, tumors of the brain, fracture of the skull, and their sequelæ, embody the latest opinions concerning their pathology and treatment, of both American and Continental surgeons. It would appear that cranial fractures, both with and without well-marked psychical symptoms, are to be treated in the future by more aggressive surgical methods. Recent experience seems to justify this departure ; and to show better immediate results and as great freedom from the unfortunate sequelæ as the expectant method.

Dr. Frazier gives a very lucid and full summary of the more recent work done on the pathology of the Gasserian ganglion, as well as a description of the technique of operation. After discussing the surgery of the face, he takes up that of the thyroid gland and of the lungs and pleura. These are all subjects of very great interest to the physician as well as the surgeon.

The breast, heart, and large vessels and œsophagus receive due attention. The matter is good and well arranged, and cannot be too highly commended.



This plan, illustrating Lt.-Col. Worthington's letter on "No. X., Canadian Field Hospital" should have been inserted at page 543 of the July number, where a description of the plan of encampment will be found.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,

WITH THE COLLABORATION OF

WYATT JOHNSTON.
C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. SEPTEMBER, 1902. No. 9.

CANADIAN MEDICAL ASSOCIATION.

Another meeting of the Canadian Medical Association has now passed into history, and we, of Montreal, upon whom devolved the task of perfecting the arrangements for the work and providing for the entertainment of our visitors, can look back and review the results of our efforts. Viewed from the numerical standpoint, the present meeting has been by far the most successful in the history of the Association, upwards of 350 members having registered, thus exceeding by 100 the roll of any previous meeting. To those from the other provinces we owe in great measure this portion of success, for while the profession resident in the city were well represented, the large numbers from the country districts and especially from the cities of Toronto and Ottawa made the meeting a truly representative Canadian one which we hope will always be a feature of our annual gatherings. And here let us remind our brethren of Montreal that they will have an opportunity next year of showing their appreciation of the compliment paid them by sending a large delegation to the London meeting.

Of the work accomplished it is, perhaps, too soon to judge. The division into medical and surgical sections, a revival of a plan adopted some years ago, has been, we feel, a success. At previous meetings it has too often happened that, from want of time, many contributors to the programme have been unable to present their papers except by title. While this has been unavoidable, it has been the cause of more or less discontent, especially to the infrequent attendant, who, perhaps, has made some sacrifices to be present in order to have the opportunity of bringing his views before the profession as a whole. As the Association grows it will no doubt be found expedient to still further multiply the sections so as to include the more important specialties.

The Addresses.—Of the character of the addresses, which we publish in full in the present number, the profession has good reason to be proud, and even had they constituted the whole work of this session, they would have well repaid those whose privilege it was to hear them. True it is that they will be published in all the leading journals of the Dominion, and thus can be read by all; but, equally true is it that much of the spirit that animates a speaker and serves to force upon his hearers the truth of his statements, and even to instil them with some of his own inspiration is lost by the mere reader.

The President's address, while reviewing briefly the position of the profession of the present day, touched upon one subject which is becoming of more and more importance to the teaching bodies, and through them indirectly to the whole profession. We refer to the proper proportioning of time spent in laboratory and clinical work in our medical schools. For example, with the increase of knowledge in special pathology and especially in bacteriology more time is required to make the student thoroughly conversant with this important part of his studies. Dr. Shepherd warns us that this may, if allowed to assume too much prominence, seriously curtail the time allotted to clinical work, which, he feels is the essential part of the medical curriculum.

All members sincerely regretted that Dr. John Stewart, of Halifax, to whom was assigned the honour of delivering the Address in Surgery, was unable to be present at the meeting, and the more so on account of the cause, which, we understand, was owing to the serious illness of a near relative. In his absence the address was read by one of the members. Taking as his subject the dependence of the advances in Surgery upon those in Pathology, the writer, by an apt illustration of how the advances in navigation have been rendered possible by discoveries which had no apparent bearing on that science, traces the various discoveries in pathology, and points out the bearing they have had on practical surgery.

"Chauvinism in Medicine" as Dr. Osler has styled his address, is much more than a mere treatise upon that quality of mind which, as the writer shows, derived its name from one of the characters depicted in a French play of the early part of the last century. It is the earnest appeal of one, who, while never slow to recognize the best in everything and to credit our noble profession with those qualities of which we have reason to be proud, yet deplores that in many ways we exhibit the spirit of Chauvinism and urges us, the most liberal of all the learned professions, to recognize the presence of this unworthy sentiment and suppress it. With him, to know in what way nationalism, provincialism and parochialism tend to lower the profession, is to avoid them, let us hope that his address will appeal to all in the same manner.

Hospitals and Museum.—A number of members availed themselves of the opportunity of visiting the hospitals at an early morning hour, at which cases of interest were exhibited by the attending staffs. From the general expression of opinion we feel that whilst it would have been unwise to allow this feature of the meeting to interfere in any way with the work of the various sections, yet the chance thus afforded of visiting the hospitals and of seeing selected cases was highly appreciated by not a few of the members.

The exhibit of pathological specimens was of unusual interest owing to the large number and variety of specimens shown. The number of contributors indicates the widespread interest in this department of medicine, whilst the arrangement of specimens and the printed catalogue reflect much credit on the industry and enthusiasm of the members of the museum committee.

The Social Side.—The social side of the meeting was by no means neglected. Perhaps the most valuable part of a meeting of this character, as pointed out in the presidential address, is the opportunity afforded of becoming acquainted with members from all parts of the Dominion, and exchanging views and hearing of their work and aspirations.

Much of the success of the meeting was due to the public spirit of leading citizens and corporations. Amongst the entertainments provided were a garden party by Mrs. James Ross, a reception at the Art Gallery, and an afternoon on Lake St. Louis and down the Lachine Rapids by the local members of the profession.

The Association is much indebted to the courtesy of the Grand Trunk Railway in providing a special train to view the Victoria Bridge and conveying the members to Lachine, whilst the Montreal Street Railway provided a trip to Cartierville and special cars to the railway station.

The meeting was concluded by a Smoking Concert which, perhaps, more than anything else was productive of that good fellowship which adds so greatly to the success of our annual meeting.

London, Ontario, has been chosen as the place of meeting for 1903, with Dr. Morehouse, of that city, as the President.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Kelly & Walsh, Limited, Singapore.

Studies from Institute for Medical Research, Federated Malay States, No. 1, Vol. I. The Malarial Fevers of British Malaya. By Hamilton Wright, M.D. (McGill) August, 1901.

The Johns Hopkins Press, Baltimore.

The Johns Hopkins Hospital Reports, Vol. X, Nos. 3, 4, 5.

W. B. Saunders & Co., Philadelphia and London.

Diseases of the Skin. By Henry W. Stellwagon, M.D., Ph.D., 1902.

Diseases of the Nose, Pharynx and Ear. By Henry Gradle, M.D., 1902.

The Year-Book Publishers, Chicago.

Materia Medica and Therapeutics, Preventive Medicine, Climatology Forensic Medicine, Vol. VII, June, 1902.

Lea Brothers & Company, Philadelphia and New York.

Cellular Toxins. By Victor G. Vaughan, M.D., LL.D., and Frederick G. Novy, M.D., Sc.D., Fourth Edition, 1902.

A Text-Book of Practical Therapeutics. By Hobart Amory Hare, M.D., B.Sc., Ninth Edition, 1902.

The New Sydenham Society, London.

The Clinical Pathology of the Blood. By Dr. Rud. Hv. Limbeck, 1901.

Selected Essays and Monographs from English Sources, 1901.

THE
MONTREAL MEDICAL JOURNAL.

Vol. XXXI. OCTOBER, 1902. No. 10.

Original Communications.

PRELIMINARY NOTE UPON EMPLOYMENT OF AN ANTI-STREPTOCOCCUS SERUM IN SEVERE CASES OF SCARLET FEVER.*

BY

Geo. A. Charlton, M.D.,
Fellow in Pathology, McGill University; late Resident Physician, Montreal Civic Hospital for Contagious Diseases.

[*From the J. H. R. Molson Pathological Laboratory, McGill University.*]

In the number of the *British Medical Journal* for Oct. 4th, just to hand, there appears (p. 1086) a paragraph upon a communication by Dr. Paul Moser, of Vienna, to the meeting of the German Naturforscherversammlung held recently at Carlsbad, dealing with the results which, in his hands, have followed the employment of an anti-streptococcus serum in the cure of scarlet fever.

His serum, it would appear, had been produced in the Sero-therapeutic Institute of the Rudolph Hospital under the superintendence of Dr. Paltauf, Professor of Pathology in the University of Vienna, by injecting horses with the products of cultures of streptococci obtained from the blood of scarlatinal patients. The streptococci had been isolated by him from the blood of 63 out of 99 children who had succumbed to the disease. The " serum has been used clinically since November, 1901, in about 84 cases, with the result, that the mortality among 400 cases of the disease in the St. Anne's Hospital has been reduced one-half. Only the more severe cases in the hospital were treated with the serum on account of the difficulty in obtaining a sufficient supply. All of the children, who were treated within three days of infection, recovered; their condition underwent a striking and rapid improvement, and the pyrexia in many cases greatly abated. So far the serum has not been produced in a concentrated form, so that a comparatively large quantity has been injected into each patient. In some cases erythematous eruptions developed, but they soon disappeared. Prof. Paltauf and Prof. Escherich, Director of the St. Anne's Children's Hospital, testify to the good results obtained with it, both in the cases of children and adults." The paragraph proceeds to state that the Austrian Government is about to devote a considerable sum to the purpose of preparing the serum in large quantities for distribution to all the hospitals.

---

* Read before the Montreal Medico-Chirurgical Society, October 17th, 1902.

Unknowingly I have, for now close upon two years—to be exact, since Jan. 26th, 1901—been engaged upon a similar series of studies upon the cases of scarlet fever admitted to the Montreal Hospital for infectious diseases, and upon the treatment of the same. The results obtained by me follow closely upon those detailed in the paragraph I have just read; in fact, they seem more remarkable. So striking have they been, that I have felt that I dared not publish on the subject until I had accumulated a larger number of cases and could place myself in a position beyond any reasonable doubt. My intention had been to wait until I could report upon at least thirty, preferably fifty, cases that had undergone the particular treatment, the number depending upon whether the epidemic of last year continued through to this autumn and winter. The singular harmony between the results here in Montreal and those recorded from Vienna, absolves me, I think you will agree, from the necessity of waiting any longer. I only add that I make the matter public at this juncture, not with any intention of claiming priority, for obviously Prof. Moser and his fellow-workers already possess such priority in publication—and that is the only priority which is permitted to stand nowadays—as also in the use of a successful serum, but to let it be known that here in Montreal and on this continent, similar studies and clinical observations, conducted independently, have led to similar results. And, more particularly, I desire to engage your interest in the matter and your aid in obtaining more cases for the employment of this method of treatment, to the end that it may be placed upon an absolutely secure basis.

During the time in which I have been engaged upon this work 117 cases of scarlet fever have been studied bacteriologically. Cultures have been taken from the tonsils and pharynx in all these cases, and streptococci have been found in 65, or 55.5 per cent. of those examined. From 25 of the most severe cases cultures have been taken from the blood during life, relatively large quantities of broth being employed for the purpose. In these I found streptococci invariably present when the blood had been obtained during the first five days of the disease. I also succeeded always in obtaining cultures of streptococci from the pus from suppurating cervical glands and in the discharge from the ear in cases of otitis media. The urine also, in suitable cases, contained streptococci, particularly if the patient had marked albuminuria at the time of examination. Courtois has found streptococci in the urine of 91 per cent. of the cases of scarlet fever examined by him while the patient was suffering from an attack of albuminuria, and in 27 per cent. of those without albuminuria. Many other workers have, from time to time, noted the frequency with which the streptococci are to be found in scarlatinal anginæ, more especially, I might here mention, Kurth, Seitz, Booker, Pearce and Dowson, all of whom have written lengthy reports giving the results of their investigations.

I would here note that for some months I was considerably interested in endeavouring to confirm the work done by Class of Chicago upon an organism which he has termed the Diplococcus Scarlatinæ. There is no doubt that an organism corresponding with that described by him can be isolated from cases of scarlet fever, especially when his methods are followed, but I was unable to satisfy myself that it had anything to do with the causation of the disease. However, I must add that the streptococcus also does not appear to be the essential agent in the disease as has been claimed by D'Epine and others. In the mild, uncomplicated cases streptococci were not found. These cases gave no trouble and, after the first week or more, required little more than detention in quarantine. My bacteriological studies, carried on at the time when I was also observing the cases clinically, bred in me the conviction that the streptococcus leads to a secondary infection, and that this secondary streptococcal infection is the cause of most, if not all, of the unfavourable complications of the disease. The severity of the attack appears to be due to the concurrent, or, as Roger employs the term, symbiotic action of this micro-organism and the causative agent of scarlet fever upon the susceptible individual, much as it has been noted that streptococcus infection renders diphtheria more severe, though the ill-effects of this symbiosis in scarlet fever appear to be still more marked.

The administration of anti-streptococcus serum was therefore indicated, to counteract the effects of the toxines of the streptococcus and to bring about the destruction of that organism. For it appeared that if this could be accomplished, the cases would resolve into a less severe type and the prognosis would become more favourable.

The various anti-streptococcic sera have, from time to time, been tried in these cases by Baginsky and others, including myself, but with little or no result. Within the last few months, however, I have had submitted to me, and have been given the opportunity to test, an anti-streptococcic serum, produced in the biologic department of the firm of F. Stearns & Co., of Detroit and Windsor, under the direction of Dr. Hubbert, head of that department. Full information has been given to me regarding the mode of production of that serum, and I have myself tested and tried the streptococcus employed in the process of production. It is but fitting that Dr. Hubbert should himself announce the methods by which he has obtained this serum. All that is necessary for me to state is that it is produced along the lines of other sera, a special process being employed, and that in my hands it has proved itself remarkably effective. Nor shall I pretend to explain why one anti-streptococcic serum is more active than another in this particular class of streptococcus infections, nor discuss whether we here have to deal with a distinct species of streptococcus, or with a strain modified by growth in association with the causative agent of this particular disease.

So far, since the 24th of June last, I have employed it in the treatment of 15 cases. These cases were all severe, and the majority of them, I have no hesitation in saying, under ordinary treatment, would, if they had not terminated fatally, at least have suffered from lingering and troublesome complications. As it was, there were 13 prompt recoveries, almost free from complication. Not one of the 13 has suffered from albuminuria nor from suppurative otitis media. In all, upon admission to the hospital, there was involvment of the cervical glands, but in only two instances did this go on to suppuration; the usual termination was by resolution within 48 hours after the injection of the serum. Another interesting feature of these cases was the rapidity with which desquamation proceeded. It was usually completed by the thirty-second day of the disease, and thus it frequently happened that a severe case was discharged before a milder one which had been admitted at the same time, but had not been treated by the serum.

Two deaths have occurred in this group of fifteen cases. One of these patients was in a dying condition when admitted to the hospital, and lived only four hours. The other, upon admission, was suffering from a severe pneumonia, and though improving somewhat, succumbed five days later to an attack of larnygeal diphtheria.

The quantity of serum injected has been moderate. My usual dose has been 20 c.cm., but in those cases which from the severity of the attack seemed to require a larger quantity, this dose has been repeated. In this respect the serum appears to be more active than that employed by Professor Moser. The effect was usually prompt : the temperature began to fall within two hours after giving the injection, and became normal in from two to four days. There has been no other treatment in these cases except stimulation during the first three or four days, with the usual precautions as to laxatives, diet, and rest. And lastly, no adverse symptoms, either local or general, have so far arisen from the use of this anti-streptococcic serum.

It does not, I hold, cure scarlet fever, but its timely administration in the severe cases, tends to allay unfavourable symptoms, overcomes complications and, given at an early stage of the disease, it prevents a fatal termination.

Thus, to sum up, the results seen by me to follow the injection of this anti-streptococcic serum in severe cases of scarlet fever have been:—

1. Rapid subsidence of the pyrexia.
2. An accompanying decrease in pulse-rate with improvement in tension and rhythm.
3. Prevention, or, at least, marked amelioration of such complications as cervical adenitis, otitis media, and albuminuria.
4. Rapid and favourable convalescence in the majority of cases.

I am not prepared to lay the most stress upon the reduction in mortality. It is true that from my clinical experience of the scarlet fever cases in Montreal during the last two years, individually I should have expected a fatal termination in the majority of the cases treated with this serum, so severe did they seem to be. But the intensity of scarlet fever notoriously varies, and again, despite the most earnest desire to preserve an evenly balanced mind, when greatly interested in a subject I recognize that this is most difficult. The physicians who sent these cases into the hospital are possibly more fitted to express an opinion. What I would emphasize is the most remarkable and rapid subsidence of serious symptoms which, in case after case, followed the employment of the serum. I have never previously seen the disease pass so suddenly from a severe, not to say alarming, to a relatively mild condition.

I hope later to publish the results of the observations in fuller detail; in the meantime, I feel that this is a matter of such promise and high import that I beg the co-operation of those here present in affording opportunities for confirming the results which I have just placed before this society.

SENILE PERITONEAL TUBERCULOSIS.*

BY

ARTHUR BIRT, M.D. (Edin.), Berwick, N.S.

At the risk of harping on a rather hackneyed theme, I venture once more to direct your attention to the subject of tuberculous disease as it affects the serous membranes. I do so with the more confidence because the case with which I shall attempt to illustrate my text forms a rather striking contrast as regards the age of the patient, the difficulty of diagnosis, and the results to be expected from surgical procedures, to the one which I had the pleasure of bringing to your notice at the Maritime meeting last July.

Case Report. The patient in the present instance was a nulliparous, married woman, 60 years of age, of good build, but rather spare and sallow. Her health had been good until the present illness, with two exceptions, *viz.*, she had suffered for many years from a tendency to looseness of the bowels following diet errors or emotional stress; and, nine months before I saw her, she had passed through what was diagnosed by her physician as an attack of pneumonia, from which she recovered after a few weeks illness, but without regaining all her former strength and vigour. When the patient came into my charge she had already been confined to bed for three weeks suffering from abdominal pains, anorexia and a tendency to diarrhœa.

At this stage the patient did not look noticably ill. There was no definite icterus. The pulse was 80, respiration quiet, and temperature normal. She complained of occasional shooting pains on movement in the upper abdominal segment, "soreness" in the lower epigastric region, and of slight colicy pains on defæcation. The abdominal contour was natural with a slight degree of tumidity (meteorism). Palpation showed a moderate tenderness along the junction of the epigastric and umbilical regions, and over this area there was slight muscular rigidity with a very ill defined sense of resistance. Percussion was resonant all over. Vaginal and rectal examinations showed the uterus rather enlarged, freely moveable, and lying backwards and to the left; cervix healthy and fornices soft, but slight tenderness on high pressure in left one. No discharge was noted. The rectum was apparently free from disease. Examination of the urine was also negative. The edge of the liver could be made out rather below its normal position, smooth and not tender. The gall-bladder was not in evidence. The spleen did not seem en-

---

* Read before the Nova Scotia Medical Society, July, 1902.

-larged nor was any information obtained from the blood examination. No enlarged glands were noticed.

With one's attention now focussed on the digestive tract, carcinoma of the *stomach* was first eliminated by inflation and the test meal, the formal procedure showing an organ of normal size without any obvious growth, the latter proving the constant presence of free hydrochloric acid in fair amount. There was, too, neither nausea nor vomiting. The possibility of the *pancreas* being the seat of disease was then considered, but the absence of jaundice, the freedom from stomach symptoms, the absence of sugar from the urine, and of fat excess from the fæces, seemed rather against it although the position of the tenderness and resistance, the fact that it seemed to shift a little with respiration and the clay coloured offensive stools did not to my mind altogether allow disease of this organ to be excluded. The *colon* now seemed to be the most probable offender, a view which gained some colour from the old history of diarrhœal attacks, which it was thought might have resulted in a chronic colitis with dilatation and thickening, especially as the tenderness seemed to follow the line of the transverse and, to some extent, the ascending colon pretty accurately. The stools, however, contained no excess of mucous and no blood, whilst inflation of the colon seemed to make the resistance more prominent, thus pointing rather to malignant disease of the transverse colon. Against this was the rarity of malignant disease in this precise position, the absence of any definite signs of stricture, of "Wyllie's patterns," of hæmorrhage from the bowel and the bright eye and non-cachetic appearance of the patient. Omental growths were also considered; but, to cut a long story short, the diagnosis remained open for about a month, at the end of which period, the physical signs having developed somewhat, I asked Dr. John Stewart, of Halifax, to see the case with me, with a view to deciding for or against surgical interference.

There was now a rather more marked degree of tenderness in the epigastric and umbilical regions, and some extension of the transverse area of resistance at their junction, the most painful spot lying a little above and an inch or two to the left of the umbilicus. There was also tenderness and ill-defined thickening to the left of the uterus near the pelvic brim. Vaginal examination gave results as before. There was still slight general tumidity of the abdomen, but no sign of free fluid could be elicited. There was, perhaps, a suggestion of "doughy" feeling on palpation. The patient had lost flesh slowly. Tenesmus was present at intervals, and the motions were pale and fairly formed. The extension of the tenderness and the ill-defined character of the resistance felt in at least two points of the abdomen, now pointed to involvement of the general peritoneum, either tuberculous or malignant; and, after a careful re-examination under chloroform, the former was selected as the more probable condition, although we did not feel able even yet to exclude malignant disease. The points which decided in favour of tuberculosis were:—The appearance of the patient; the lack of virulence in the progress of the disease; the ill-defined nature of the thickening felt (suggesting multiple adhesions); the absence of free fluid and of definite nodules, more or less umbilicated; the moderate character of the pain; and last, but not least, the history and residual signs of pleural involvement, this latter giving us (assuming the disease tuberculous) a definite primary focus.

Operation was deferred for the time being and the patient was put, at Dr. Stewart's suggestion, on the treatment recommended by Burney Yeo of late years; *viz.*, a pill of iodoform and creasote, with the regular inunction of an ointment containing iodoform over the abdomen. The usual anti-tuberculous measures were, of course, taken.

Medical treatment, however, proved of little avail and the case slowly but steadily progressed until, at the end of another six or seven weeks, she presented the third and final picture. At this stage the patient was markedly emaciated; the abdomen was greatly distended, the lower segment being now the more prominent, and projecting forward and rather to the right. The squareness of free fluid was still lacking. Over the area of greatest prominence, (Vide Fig.) the percussion sound was nearly flat, with an extremely high pitched tympany on lightest percussion. There was also a vague sense of fluctuation over this area but no " thrill." The flanks, especially the right, were a little more resonant. The abdominal wall was still quite thick in contrast to the general emaciation. As to her symptoms, pain was now much more marked, requiring moderate doses of morphine; it was referred chiefly to the old site and was occasionally felt with great severity in either groin. There was continual regurgitation of food and bile, from compression of the stomach. There was a trace of albumin in the urine. Urination and defæcation were difficult, and marked œdema of the sacrum and lower limbs had supervened.

Before the patient had arrived at such a pass the question of laparotomy had been mooted more than once. In view, however, of the patient's age, the anomalous physical signs, the disinclination of herself and relatives, unless some permanent and definite result could be promised, and the rather unsettled state of present medical opinion as to its value in such a case, the idea was reluctantly abandoned. A fortnight before death, permission was given to introduce a trochar to try and reach the encysted fluid, which was presumably present.

This was promptly done, midway between pubes and umbilicus, and it was felt to pierce a greatly thickened, gristly peritoneum, but, in spite of various manipulations, I failed to strike the fluid and did not again have an opportunity to try. The patient lingered for two or three weeks and finally died from simple asthenia, owing to the continual vomiting of food. In the last few days of her illness the left pleura was noted to contain some fluid.

Autopsy. A considerable deposit of fat in abdominal wall. Lower part of omentum adherent to abdominal wall, forming with intestine the front wall of a cavity containing a large amount of turbid serum in the lower central zone. Sparsely scattered miliary tubercles on peritoneal surfaces, in mesentery, etc. The resistant mass in epigastric and umbilical region composed of laminated adhesions, between thickened omentum, colon, liver, etc. The adhesions were firm and fibrous, and only a few scattered miliary tubercles were detected in the laminæ. Subdiaphragmatic adhesions were also present. Liver moderately enlarged and markedly fatty. Stomach compressed closely under diaphragm. It showed only signs of slight chronic gastritis. Pancreas, spleen and kidneys appeared healthy. Colon showed nothing internally but chronic mucous catarrh; it was, however, kinked and pressed on by the adhesions and the omentum lying athwart it. Mensenteric glands caseous. Sigmoid showed collection of larger tubercles on it, forming a patch of some little size (this was apparently the tender point noticed to left of uterus during life). Uterus moderately enlarged, lining showed caseous patches, as did the tubes and ovaries. Left pleura showed a few miliary tubercles; its cavity was half full of turbid serum, and the lung was partially collapsed. The lung was not tuberculous. Right pleura a few old adhesions. No tubercle in right lung. Heart somewhat dilated and fatty. The tubercle bacillus was demonstrated in scanty numbers.

Consideration of the conditions above noted lead one to infer that a two-inch incision would in all probability have evacuted the fluid and prolonged (for a little at any rate) the patient's life. Her age, the pleural involvement, and the extensive adhesions in the upper abdominal zone, seemed to almost prohibit a final recovery. The primary source of infection seemed clearly to be the pleura and dated probably from the old, so-called pneumonic attack.

I venture to add a few remarks on the diagnosis of these cases. In the first place we evidently cannot depend greatly upon temperature and pulse. Subnormal temperatures have been frequently recorded, and are not at all uncommon in all forms of tuberculosis in the chronic insane. I have personally noted this more than once in demented patients, found at autopsy to be suffering from tuberculous peritonitis.

it may occur also in elderly patients, whose reactive powers are on the wane. In the present case the absolutely normal pulse and temperature, persisting until quite late on in the disease, were interesting. The explanation seemed to be:—(*a*) small doses of toxin (few bacilli), or (*b*) defective reaction to them in degenerating tissues.

The exclusion of malignant disease in the stomach is, of course, important, but this can be secured by careful palpation, inflation and the appropriate chemical tests. Pancreatic disease might give rise to doubts, especially in the early stage of a case like this, where there is no free fluid in the greater peritoneum and the distension and resistance appear first in the upper zone, and where no portal of tuberculous infection is evident. It's comparative rarity must be borne in mind, and, also, the unreliability of fatty stools and glucosuria as proof of its presence or absence.

Before evidence of general involvement of the peritoneum is present, the possible existence of carcinoma of the large intestine has to be considered. Morris, of London, and Fried. Crämer have recently called attention to the stealthy advance and anomalous symptoms of this condition. Of these latter, attacks of colic, intestinal rigidity, stenotic murmurs, persistent tenesmus, with small, repeated, bright hæmorrhages seem to be the most reliable. In my case there was considerable difficulty in eliminating this condition at one stage of the diagnosis. As soon as it is evident that the general peritoneum is involved, the diagnosis narrows down practically to a separation of tuberculous from malignant disease of that membrane. In this relation the detection of a primary tuberculous, or probably tuberculous, focus in pleura, genital tract, or elsewhere, is all important; and the history gives valuable suggestions. The omental tumour is common to both conditions, and its vagaries are decidedly puzzling. It may form*:—(*a*) A solid cake-like structure lying on the intestines, and be mistaken for an enlarged liver. (*b*) Be drawn up, thickened and adherent to abdominal wall. (*c*) Be quite drawn up and form a hard ridge attached to transverse colon. This occurs in some cases of diffuse malignant disease of the abdomen.

The doughy feeling of the abdominal wall in tuberculosis is very suggestive when it occurs. After all, some cases must remain for a while in doubt. In malignant disease the rapid accumulation of free fluid and the detection of large umbilicated nodules with glandular enlargements, is more common. In either cases the fluid may be sanguineous and characteristic elements wanting. F. P. Henry considers that a peri-umbilical erythema is diagnostic of tuberculous peritonitis, when present.

---

* Gibson and Russell "Physical Diagnosis," 1902.

Into the diagnosis between the acute cases of this disease and typhoid fever, and between the encysted cases and ovarian tumour, I do not propose to enter ; the latter is classic, and described in all the text-books, so that it is sufficient to remind you how often the mistake has been made and in what skilled hands. I recently was told by a friend of a case that was operated upon for acute appendicitis, in which tuberculous peritonitis became the diagnosis on inspection.

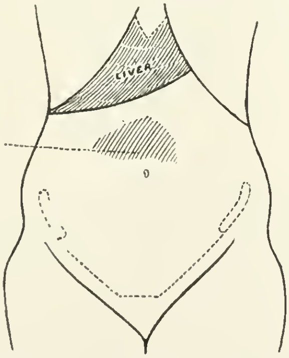
I am aware that within the last year or so there has been a considerable reaction amongst the surgeons with regard to operating on these tuberculous cases.* Some go so far as to hand back all of them to the physician. I think, however, that the bulk of us are agreed, that in the cases with free fluid, no probable adhesions, and fever, drainage by a limited laparotomy is the best treatment. It is such cases as the one I have reported, and those with multiple loculi filled with fluid, in short, the ones that are hard to diagnose and hard to drain, that I would like some of my surgical confrères to advise us on.

At the same time it would be interesting to hear suggestions as to diagnosis or treatment from those who, like myself, have been nonplussed at times by the protean forms of this common but always important disease.

In conclusion, I would like to acknowledge my indebtedness to my able consultant, Dr. Stewart, whose diagnostic acumen and sound judgment were most welcome in the handling of the case.

N.B.—Appended are rough diagrams to illustrate three stages of the case.

STAGE I. ATTEMPTED DIAGNOSIS BY EXCLUSION.



Ill-defined feeling of resistance with slight tenderness.

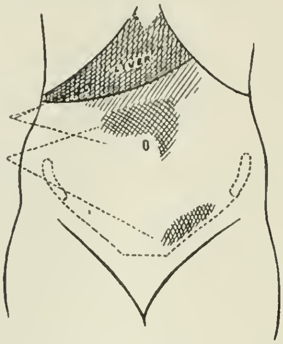
Symptoms—Pains in abdomen ; looseness of bowels ; anorexia ; slight loss of weight. Temperature, pulse and respiration, normal.

Signs—Contour normal ; abdomen tympanitic all over ; ill-defined feeling of resistance and slight tenderness over region of transverse colon as indicated ; no sign of fluid.

---

* International Clinics, Vol. IV Fifth Series.

Stage II. Tentative Diagnosis Tubercular Peritonitis.



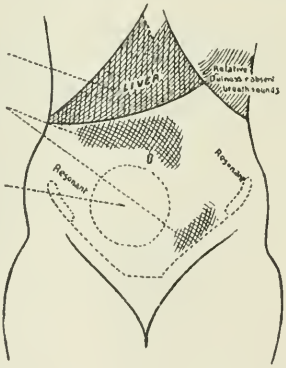
Resistance.

Resistance and tenderness.
Sub-tympanitic note.
Upper segment of abdomen the more prominent.

Symptoms—Pain more marked, especially on movement or defæcation; tenesmus; alternate attacks diarrhœa and constipation; slow but steady emaciation. Pulse, 85—90; respiration normal; temperature normal.

Signs—Distension more marked, but still only slight; contour not much altered; breathing costo-abdominal; marked tenderness and resistance as indicated (Fig. 2); the upper segment of abdomen being more prominent than normal; lower end of liver can be sharply differentiated above the mass; tender thickening in l. iliac region to left of retroverted uterus; no sign of free fluid.

Stage III. Positive Diagnosis—Encysted Dropsy of Peritoneum (Tuberculous) with Omental Tumour.



Resistance.

Resistance, pain and tenderness.

Area of greatest prominence with high-pitched, almost flat note on percussion. Lower segment of abdomen the more prominent.

Symptoms—Marked emaciation, except of abdominal wall; pain more marked and more continuous, especially over tumour and in groins, tenesmus at times; continual regurgitation of food and bile, difficult urination and constipation.

Signs—Dulness and absent breath sounds at lower base; abdomen greatly distended, greatest prominence below umbilicus and to right (vide figure); over this area percussion sound is nearly flat, with a suggestion of very high-pitched tympany on very light percussion; there is a vague sense of fluctuation over this area, but no real thrill; flanks more resonant, especially the right; marked œdema lower limbs and sacrum; trocar midway between pubes and umbilicus failed to withdraw fluid.

FOREIGN BODIES IN THE VERMIFORM APPENDIX.*

BY

JAMES BELL, M.D.,
Professor of Clinical Surgery, McGill University; Surgeon to the Royal Victoria Hospital, Montreal, etc., etc.

It is safe to say that in the earlier days of operations upon the appendix verniformis, less than two decades ago, all of the laity and many members of the medical profession believed that appendicitis was generally, if not always, caused by the presence of a foreign body in the appendix. This belief arose from the fact observed in autopsies, especially those made upon fatal cases of peritonitis, that the appendix contained, or had recently contained, a concretion which was assumed to have a grape seed, apple seed, or some other foreign body, as its nucleus. Indeed, within the last ten years (it was in 1893), a distinguished foreign physician, who was present at my clinic when I operated upon two cases of gangrenous appendicitis, in each of which a large concretion was a conspicuous feature, said to me, in speaking of the case after the clinic was over, "Excuse me, but I did not hear you bring out the fact (in the history) as to when these patients had eaten the grapes."

Surgical treatment of the inflamed appendix and its consequences, necessarily led to a careful and thorough examination of the parts removed, as well as of all the tissues involved, and especially of the concretions and other contents of the appendix. The result has been an absolute demonstration that appendicitis does not depend upon the introduction of foreign bodies, and, moreover, that real foreign bodies in the appendix are very rare indeed. The concretions so constantly found nearly always consist of inspissated fæcal matter without nuclei of any kind; and all degrees of inspissation are observed.

I will now go further, and state my opinion that when foreign bodies do enter the appendix, they are either accidental occupants, or, if they give rise to symptoms at all, they do so in a different way and do not, as a rule at least, cause a genuine appendicitis. In the last ten years I have found the following foreign bodies in the appendix, in cases operated upon for its removal, viz.: In two cases, ordinary pins; in one a forked fish bone; in another a large and a small gall-stone; in another two seeds (probably flax seeds); in another a bit of woody fibre (probably apple core); and in another case in which a portion of the appendix had sloughed off, a large lumbricoid worm lay in the localized abscess.

---

* Read before the Canadian Medical Association. Sept. 17, 1902.

This is not a large number to have discovered in, say, about 900 to 1,000 operations, and yet, as far as I know, it is much larger than the average proportion. I have discussed this question with a good many surgeons who have each done a large number of operations every year, without ever having found a foreign body in the appendix. Of course, I refer to real foreign bodies, introduced from without, and do not include those fæcal concretions or accumulations (coproliths), some of which may contain foreign material. The fish bone, the flax seed and the apple core, were probably accidental occupants of the inflamed appendix, although it could not be shown that they had no relationship to the disease, and the worm had probably escaped through the open end of the appendix and had nothing whatever to do in causing appendicitis.

In one of the pin cases the discovery was made so late in the suppurative process, that no inferences could be reasonably drawn one way or the other. In this case the patient, a young man, had suffered from an abscess in the right Scarpa's space, which had been opened and drained. A sinus had persisted, and he came to the hospital several months afterwards. In following up this sinus it was found to extend beneath Poupart's ligament and communicated with the open extremity of the adherent appendix. The appendix was removed and an ordinary pin was found lying in the abscess cavity at its extremity. The symptoms had been indefinite and subacute, and had not caused any suspicion of appendicitis. In all probability perforation of the appendix at its tip by the pin had occurred, causing adhesion and abscess without any inflammation of the appendix itself.

In the other two cases, which were observed in the acute and early stages, the symptoms and pathological changes produced were those of intestinal perforation. They were, briefly, as follows:—

Case 1.—A boy, 16 years of age, was admited to the Royal Victoria Hospital on the afternoon of July 9th, 1894, with a diagnosis of acute appendicitis, and immediately operated upon. He stated that he had been kicked in the abdomen on the 7th, forty-eight hours previously, and that pain and vomiting had begun almost immediately. There was a definite hard and tender mass in the appendix region lying well anteriorly. On opening the abdomen this was found to be the appendix embedded in an enveloping mass of omentum. The whole mass was removed, and on examination a black pin of medium size was found protruding through the appendix near its apex. Two-thirds of the pin lay outside the appendix in a small collection of pus. The mucous membrane of the appendix did not seem to be abnormal, and bacteriological examination of it was negative. The boy stated that for a year previously he had had slight attacks, of short duration, of pain in this region. This history seems to show very clearly that the pin had found its way into the appendix several months previously, and had given rise to very little in the way of symptoms until a blow upon the abdomen caused it to perforate the appendix; and then arose a train of symptoms due to perforation without pre-existing inflammation.

Case 2.—Has a very similar history. A young woman, æt. 22, on the afternoon of Thursday, July 31st, 1902, had stepped up on to the seat of a chair to enable her to place a heavy book upon a high shelf. In stepping down, afterwards, the chair tilted and the back of it struck her in the lower abdomen and gave her some pain, and she felt sore for the balance of the day and the next day, Friday. On Saturday she scarcely felt it, and did her day's work and ate her evening meal about 6 o'clock with her usual relish. About 9 o'clock, however, she began to have severe pain in the abdomen. This was so severe that a physician was called and gave her a hypodermic of morphia, and she had a fairly good night. On Sunday she had a good deal of pain and vomited frequently. Sunday night she suffered a good deal, and about 8 o'clock the pain became unbearable, and she could not "get her breath." The ambulance was sent for and she was brought to the hospital; I was summoned at 10 o'clock a.m. She then showed all the evidences of having a severe general peritonitis. She was livid, breathing with difficulty, short catchy breaths; pulse, 140 to 160; temperature, 102°, and the abdomen somewhat distended and absolutely rigid. The previous history could not be fully obtained under the circumstances, but these two important facts were elicited—she had had an attack when she was thirteen years of age which had been diagnosed as appendicitis, and she had never suffered from dyspeptic symptoms.

In spite of these statements, I thought that the peritonitis was probably due to a perforated gastric ulcer, and opened the abdomen in the middle line above the umbilicus. There was a gush of gas and a flow of pus when the peritoneum was opened. The whole cavity was literally swimming in pus. There was no perforation of the stomach and the gall bladder and gall passages were normal, but a mass was felt by the hand within the abdomen, in the appendix region. An incision was made over this and the cæcum delivered through it. The appendix stood upright with an opening near its base, as large as a five-cent piece, partially blocked by a large facetted gall stone more than half an inch in diameter. A small facetted gall stone lay in the appendix beyond the larger one. On moving the bowel so as to displace the stone, liquid fæces poured out of the opening. The appendix, including the stone, was removed, the peritoneal cavity cleansed and drained, and the patient did well.

On the 11th of August the gauze was removed and the wound sutured. On the 20th the temperature began to go up. On the 25th there was slight cough but no pain, some slight increase in the area of dulness in the right side—some slight upward increase in the area of hepatic dulness. An aspirating needle introduced in the 8th intercostal space, just behind the posterior axillary line, found pus. Next morning, on the 26th, a portion of the 8th rib was removed and a healthy pleural cavity opened. A portion of the 9th rib was then removed and adherent pleura encountered, but no pus, and a crepitant lung. A needle introduced through the lung withdrew pus. The lower border of the lung was then perforated at the spot by the cautery, but no pus found. The finger introduced found neither pus nor cavity, and separated the adherent lung from the diaphragm for some distance. In the meantime the patient began to cough and expectorate about half an ounce of pus. Since that time a moderate discharge of pus has developed through the lung, and an occasional small quantity is expectorated. The patient is still feverish and weak, but has neither symptoms nor local sign, and her abdominal condition is all that could be desired.

It will be noted that the first symptom in this case occurred from 50 to 52 hours after the injury, that operation was performed about 38 hours after the first abdominal symptoms, and that the later symptoms of subphrenic abscess penetrating the pleura, occurred about 21 days after the operation.

Here again the foreign body had been in the appendix for a long time (9 years), and a slight blow upon the abdomen was the initial factor in producing a large perforation of the appendix, close to the bowel, with precisely the same result as would have followed had an opening been produced by a shot-gun, stab-wound, or other traumatism, or by an acute or chronic ulceration from within.

Incidentally I may point out that this case is almost unique in the number and variety of unusual and grave pathological conditions. In the first place, the passage of gall stones is unusual at such an early age; secondly, there is clear demonstration that the large gall stone must have passed along the gall ducts into the intestines, as I examined carefully the gall bladder at the time of operation and ascertained that nothing in the way of spontaneous anastomosis (if one may use the term), between the gall bladder and any part of the intestinal canal, had occurred; thirdly, the perforation after a slight traumatism; and, finally, the extraordinary course of the pus which found its way into the lung three weeks after operation. In explanation of the latter condition, I believe that it must have found its way into the mediastinum along the right crus of the diaphragm.

It would, of course, be absurd to draw general conclusions from such a small number of cases as I have been able to report in the present communication; but, when on the one hand, such an overwhelming number of cases of appendicitis are due to causes other than the presence of foreign bodies in the appendix (causes with which we have at present no concern), and on the other hand, when the cases which have been observed of foreign body in the appendix, seem to show that the foreign body had no such causative relation to the disease; and, finally, when these facts are *a priori,* in accord with the results of general surgical experience, the conclusion would seem to be almost irresistible, that such foreign bodies have no essential relationship to the condition which is so widely and generally known as appendicitis. I am well aware that it is unnecessary to argue this point, as no one at the present day would seriously dispute the foregoing conclusions, but the discussion of this subject has given me the opportunity of placing upon record a couple of very interesting cases and calling attention to a cause of intestinal perforation which has not heretofore been generally recognized.

NORMAL LABOUR.*

BY

N. Preston Robinson, M.D.,
Attending Physician to the County Carlton General Hospital.

The subject of normal labour in general practice is more important than has generally been recognized. My object is, therefore, to outline the subject briefly, with the hope of bringing out some important discussion on the whole subject of obstetrical practice.

At the outset I desire to say that if the laity were better informed with regard to the great importance of the proper management and treatment of the patient during gestation, as well as during her delivery and after treatment, it is my firm belief that the oft resultant wrecking of the mother's health would be materially minimized, and the manifold operations and treatment of the ambitious gynæcologist would be considerably diminished. It is not my desire, however, to depreciate the good offices of the gnyæcologist, but rather to chide ourselves, the general practitioners, for our many failures in the past to bring our patient successfully through her gestation and puerperium.

Lest I might be considered pessimistic, let me say at the outset, from observation, that I believe the results obtained at present in the management and treatment, especially of the puerperal state, are much better than the results obtained by ourselves and our predecessors ten or fifteen years ago. For this improvement, much credit is probably due to the more general understanding by the profession of asepsis and antisepis as applied to labour and the puerperal state. There is yet much room for advancement, however, and we, as physicians, should not be satisfied till we are able, even in abnormal and difficult cases, to guide our patient through her oft-dreaded and all important event, without any lacerations or complications of any kind.

Now, what is the physician's duty with regard to a patient in the early stages of gestation, who engages him for her confinement, and who may or may not draw his attention to any of the various ills to which she may be subject at this time? Some women there are who are so healthy, or who from instinct or acquired knowledge, so regulate their habits by an obedience to Nature's laws, that they require little or no advice during this period. Many, however, stand greatly in need of special treatment or advice to guide them aright in this important era.

Who can estimate the importance of a woman's environment, as well as that of her general health, in its effect upon her expected offspring while it is yet in the early embryonic stage? While scientific investigation in the human family has not yet reached a climax along this line, yet we learn from the analogy of comparative anatomy and physiology that a healthy mother, surrounded during gestation by refined and cheerful company, and the best possible environment, cannot fail to produce the most desirable and healthy features in her child, both physical, mental and moral.

---

* Read before the Canadian Medical Association, Sept. 18, 1902.

With regard to the diet of the patient during gestation, and other hygienic treatment, I shall say little, as the same general rules apply as at other times. The bowels should be regulated by laxative foods, mild laxatives, mineral water, etc., and the diet should be nutritious, but not excessive.

Perhaps the most important organs of the whole body to watch at this important period are the liver and kidneys, whose functions in the most healthy are ofttimes prone to be refractory on even slight provocation. Toxæmias of various kinds, with their multitudinous nefarious effects—now well worthy of our suspicion in almost every functional deviation from health—should be doubly doubted in the case of the pregnant woman who manifests any special disturbance of her physiological functions.

Pregnancy is not a disease, but a physiological incident, and can be maintained as such by the observant and ready physician. Let us not wait, then, till serious manifestations of albuminuria are apparent or the blood becomes surcharged with bilirubin or biliverdin, urea or uric acid; but set about without delay by the ordinary eliminative processes, to rid our patient of the waste products retained in the blood.

The principal reasons why our pregnant patient is peculiarly exposed to the dangers of auto-intoxication are that she is exposed to an increase of waste as well as a diminution of excretion. First, her blood contains an increased amount of poisonous material due to stimulation of the metabolic processes to provide for the nourishment and protection of the fœtus and the tissue-waste passing into her circulation from the fœtus. Secondly, the enlarging uterus may produce reflexly a spasmodic contraction of the blood vessels, and as it enlarges there is a constantly increasing intra-abdominal pressure with a growing liability to mechanical interference with the action of the liver, bowels and kidneys. I need not here enumerate the various symptoms of these toxæmias familiar to you all, but would only emphasize the importance of frequent urinalyses to ascertain the presence or absence of albumen or sugar, and above all, to measure the approximate elimination of urea from a 24 hour sample of urine, which may be deemed a reliable clinical index of elimination. A microscopic examination showing the state of the kidney tissues will complete the data required for an exact diagnosis.

I have, perhaps, indulged in some verbosity with regard to toxæmia in pregnancy, because I recognize in its train a large factor in the causation of all the ills that may follow during labour and the puerperal state. Even pernicious vomiting of pregnancy may own toxæmia as its chiefest cause, although in this case, we should examine closely into probable peripheral sources of irritation as well. Perfect quiet and rest may be required by an excitable and weakened patient.

Irritation from a displaced uterus can be detected and corrected by bi-manual manipulation. Pessaries or aseptic tampons may be used to advantage. Should the displacement be complicated by adhesions, tampons medicated with ichthyol and glycerine are useful. If there is no pathological condition other than a cervical discharge or erosion of the os uteri, then treat with nitrate of silver applications, or dilate the os; if rigid, dilate under chloroform, which may, however, produce an abortion, mention of which should always be made if such procedure be deemed necessary. Chloral and sodium bromide may also be used to overcome the irritability of the nerve centres after eliminative measures are exhausted. Abortion or premature labour may be justifiable in extreme cases.

And now, with regard to *Labour,* it is not my intention to deal with the subject, more than to make a few observations which have frequently impressed me in my more or less limited twelve years' experience. I have learned to look upon normal labour as a physiological process which in normal conditions of health will be accomplished satisfactorily with little aid from the obstetrician. While meddlesome midwifery is surely to be deprecated, yet I believe much suffering can be averted and much appreciated aid can be rendered by the prudent, careful and judicious obstetrician.

In many cases the stage of dilatation is a much prolonged, exceedingly painful and tedious process, due perhaps to the condition of the already weak, over-sensitive and exhausted patient. In such a case, my usual practice is to give a few whiffs of chloroform, and the same dilatation is accomplished by the fingers, without suffering, in three to five minutes, which would have taken by nature's patient and long-suffering method hours to accomplish. Then I sometimes give her another chance in the second or expulsive stage, which is often too slow for the patient's patience or weak condition; the latter condition being usually the chief index of the length of time I wait before I again supplement her work by that most valuable though most dangerous instrument in undexterous hands, the forceps.

And here I desire to state my belief that in dexterous hands the forceps can be used successfully in almost any case of confinement where indicated, except perhaps extreme contracted pelvis or extreme monstrosity, without injury to either mother or child.

Many cases occur where the vertex is extremely large anl the vagina and perineum comparatively small. These are the cases that are trying on the patience in an attempt to save the perineum, and where nature unaided, if she deliver at all, will be sure to rupture the perineum, perhaps completely into the anus.

These are cases where the experienced obstetrician can crown himself with glory, although the excellence of his work may never be recognized by anyone but himself in this world. On the other hand, the obstetrician who fails in preventative may crown himself with jewels by securing a more or less imperfect union of the lacerated perineal tissues, and the patient's knowledge of the brilliant stitching operation necessary in her extraordinary and unique case. A year or so later his patient returns with leucorrhœa and bearing down and sinking and pains galore. He now reveals to her the fact that she has a *new* disease in another and entirely different field, the gynæcologist's realm, who is in turn rendered ever grateful to his confrère for such fruitful supply.

It is not my purpose to go into the details of the *modus operandi* of the different stages of labour which every obstetrician works out more or less satisfactorily for himself. I beg leave to mention chloroform as a most useful adjunct, the benefit of which I believe to be great in almost every case when used judiciously. At the acme of expulsion, as the head is passing the introitus, the anæsthesia should generally be pushed to full unconsciousness. This not only spares the patient the severe pangs of labour, but, by retarding expulsion and by relaxing the muscular structures of the pelvic floor, it lessens the risk of lacerations at the vaginal outlet. I would also recommend the judicious use of chloroform occasionally in the second and first stages of labour. It relieves needless suffering and spares unnecessary exhaustion, but anæsthesia should be avoided till the latter part of the expulsive stage.

The mechanism of expulsion must be so regulated that the smallest circumference of the head is constantly kept within the grasp of the existing girdle. The direction of expulsion must also be controlled lest the soft parts be subjected to too great strain by misdirection of the driving force. The head should be permitted to descend only so far at each pain as can be done without exposing the tense structures to risk of tearing. To relieve the pelvic floor from undue strain by misdirection of the expelling force, press the head firmly up into the sub-pubic arch and at the same time the perineum may be supported by the palm of the hand; thus the movements of the head may be controlled till the perineum is sufficiently stretched to ensure safety.

Having thus safely accomplished delivery, it is my practice to immediately proceed with the delivery of the placenta by a modification of the Crèdé method, making only sufficient interval to tie the cord and wrap the child. With one hand firmly grasping the uterus and pressing it down and compressing it, I immediately enter the fingers of the other hand into the vagina, where, if I do not quickly find the placenta expelled, which is usually the case, I follow into the uterus and grasp or scrape if need be, with nature's best instruments, the fingers, and between my two hands I carry away, not only the placenta, but even the decidual membranes. If this final act of expulsion of the placenta and contraction of the uterus—thus completely emptying it of child, placenta, membranes and incidental clots—is properly accomplished, and the uterus accordingly fully contracted, there is little or nothing to fear in the puerperal state. Nowadays, with our universal knowledge of asepsis and antisepsis, there is no excuse for septicæmia. I trust I may be pardoned, however, in this connection, for emphasizing more especially the universally admitted importance of the details of asepsis throughout the confinement.

The nails should be thoroughly cleaned and the hands scrubbed with soap and boiled water, if not in some antiseptic solution. Greater precaution still should be exercised if the physician has recently been exposed to the exanthematous diseases, diphtheria or a post-mortem examination.

The practice of keeping a peurperal patient in bed, using bed-pan, etc., and almost motionless for ten days, I think has now become almost obsolete. I am a thorough believer in attending to nature's calls in the erect posture as soon as they occur, and I encourage the patient to sit erect in bed as soon as possible, because of the advantage of gravity in aiding the natural effort of the uterus to rid itself of the natural discharge. An occasional douche with warm water or any of the weak antiseptic solutions I believe to be useful in many cases, but I do not consider it necessary as a routine practice.

Another point on which I would like to hear some discussion is with regard to the use of ergot after delivery of the placenta. In my early experience I used it as a routine practice. I discarded it gradually. till at present I believe there is little or no need for it. The only case in which I would recommend it now, is that of possible post-parten hæmorrhage from inertia and relaxation of the uterus,—a complication which I believe to be entirely a preventable accident. The application of a good pad over the uterus and a snug and well-applied bandage will ensure safety in the case of any uterus that hai once been fully contracted. Ergot may also be considered something of an additional safeguard where, for any reason, prolonged anæsthesia has been necessary.

Chloral has its well understood use in the first stage of labour, where the os is rigid, but I am not a believer in very large doses. Better supplement its action with a few whiffs of chloroform, even at the risk of diminishing temporarily the pains.

THE COUNTRY PRACTITIONER OF TO-DAY.*

BY

J. R. Clouston, M.D., Huntingdon, Que.

Under this title I would include the grey-haired veteran who, in some measure at least, has kept in touch with the progress of medical science, as well as the newly-finished product of the medical school who is up-to-date in everything, except experience.

My remarks will apply particularly to the English-speaking doctor as he pursues his calling in the valley of the historic Chateauguay, in the south-western corner of the Province of Quebec. He is a son of the soil, invariably. No city youth would ever content himself to settle down to practice in a country village or rural district. As a rule he is a man of average ability; the dull ones are weeded out before graduation day, and the brilliant ones naturally and wisely gravitate to the cities and towns. He is a unit in the great army of professional workers, who, as individuals, are seldom or never heard of beyond the little circle in which they live.

The great advances made in all branches of medical practice during the past twenty years have not been limited to hospital and city work, but the knowledge obtained at college, laboratory and hospital has been carried to the country places and applied to relieving the sufferer wherever found. I have no wish to disparage the work of our predecessors. Good work was done before we were born, and better work will be done after we are gone than we are doing now, but I wish to note some of the benefits which country residents enjoy from an improved medical service.

Twenty years ago deaths from sepsis during the puerperal period were common, and many a family of small children was left motherless because of "inflammation" or other complication. To-day, under medical care, this happens only in rare instances, and there are men who have been in active practice for five, ten, and even fourteen years who have never had the misfortune to lose a case as the result of confinement or miscarriage, although they have run the gauntlet of hæmorrhages, eclampsias, abnormalities, and mal-presentations, in all sorts of surroundings, and in spite of the lack of the trained nurse and other convenient accessories of modern midwifery which are considered indispensable by the city physician. Not only is the mortality reduced to almost

---

* Read before the Medical Section of the Canadian Medical Association, at Montreal, Sept. 18th, 1902.

nil, but the solace of anæsthesia afforded, severe lacerations prevented or repaired, and pelvic diseases subsequent to parturition reduced to a minimum. These results are not obtained without vigilance. In addition to waiting upon himself in the matter of procuring boiled water and preparing utensils, the careful man must keep a sharp look-out that the untrained nurse does not mar his arrangements, in her zeal.

In times within the memory of the youngest practitioner scarlet fever and diphtheria used to pass along a neighbourhood like a scourge, claiming one or more victims from every family of young children. This is a thing of the past. Very few deaths occur from these diseases now, where a physician has been called. Isolation, antisepsis and antitoxin have robbed these diseases of their worst terrors.

The better management of acute febrile diseases, such as pneumonia, pleurisy, rheumatism, Bright's disease and typhoid fever has reduced their mortality to a very low rate, especially during the active period of life. From the vital statistics of the province for the year ending June 30th, 1901, I find the total number of deaths in the county of Huntingdon set down at 157. Only 42 occur between the ages of five and fifty-nine years. Of these tuberculosis accounts for 20, or nearly one-half. Organic disease of the heart claims 4; diphtheria and croup, 2. Only one each is attributed to the following causes: typhoid fever, appendicitis with abscess, pneumonia, enteritis, puerperal septicæmia, puerperal hæmorrhage, alcoholism, and intestinal obstruction. This, out of a population of over 13,000, is not a bad showing, except for tuberculosis. Perhaps the comparatively infrequent occurrence of venereal diseases in country practice may account to some extent for the low mortality. Railway facilities enable us to send some bad cases to the city hospitals, especially surgical cases. Three cases of compound fracture of the skull, two of them with loss of brain substance, occurring in my own practice within recent years, have been saved by the skill of the surgeons in the Montreal General Hospital.

The best results of the country practitioner are not always obtained by the use of the newest fad in medicine, or the latest wrinkle in surgery, although new things are sometimes employed with the happiest results, but by attention to the general principles of the healing art. For example, we are called out on a mild winter morning to consult over a man who is suffering from double pneumonia. He is only 48, but he looks much older; he has been intemperate, and his physician has despaired of his life. We find him in a small room upstairs under a pitched roof. The room is darkened to exclude the light from his face, the door and window are closed tight for fear he might catch cold, three neighbours are watching by the bedside to show their sympathy and minister to the sufferer. The patient is delirious and cyanosed.

We examine him and say privately to the doctor, "Your diagnosis is all right, and your treatment is all right, but I don't like that room." "I don't like it either," he answers; "but I cannot get them to let him have more air." "Oh, but we will back you up in that." As no other room is altogether suitable, we call for a hammer and some small nails. We remove the curtain altogether, and half of the small window. We tack up a piece of netting to keep out the snowflakes, and a shawl to prevent draught blowing directly on the patient. We have the bed reversed so that his eyes are shaded, order the watchers to get behind the bed to be out of the way of draughts, and issue the injunction, "Now, don't touch that window till the doctor tells you to." An hour later we find the cyanosis considerably lessened and the respirations easier. The following day a favourable crisis occurs, and the man is soon well.

Typhoid fever is not a very fatal disease in country practice. But it often gives the physician ample scope for the use of his art. Exceptionally there is a trained nurse to lighten the burden, but as a rule he has to give instructions—and not only instructions, but object lessons—in feeding, bathing, cold sponging, and disinfection, and see that they are carried out.

One remarkable case seen on the twelfth day is worth mentioning. There was troublesome diarrhœa, and in the fourth week great meteorism which was hard to combat. A drive of eight miles over a bad road was necessary in order to reach him. The patient use of the rectal tube to draw off flatus was attended with considerable success, and probably turned the trembling balance in his favour. After apparent convalescence had set in, a fluctuating tumor, with pain, developed in the umbilical region. Improvement was arrested, the temperature was irregular, and the strange tumor increased in size. Beyond the fact that the tumor was fluid I could not make a diagnosis. He was fearfully reduced and getting worse, so I determined to send him by boat from Port Lewis, where he lived, to the General Hospital, in the faint hope that something might be done to save him. There the opinion was reached that the patient was suffering from tubercular peritonitis instead of typhoid. As his condition became desperate, obstruction of the bowels having set in, he was turned over to the surgical department, where 20 ounces, or more, of pus were evacuated through an incision below the umbilicus. His blood gave the typical typhoid reaction. The conclusion finally adopted was that it was a case of typhoid perforation followed by localized abscess, a very rare occurrence. The man made a good recovery. Up to the present date, out of 46 cases of typhoid, I have lost three patients. The last case I had was an unusual one in a man of 70 years, who succumbed after one hundred days of illness.

Appendicitis is another disease which usually does well. There are cases which recur and recur with lessening severity, and finally cease, remaining quite well during the intervals. Some do not recur at all. The hospital surgeon cuts down and amputates the inflamed or gangrenous appendix, and demonstrates to his student class the wisdom and necessity of doing so. Perhaps he is right. If every patient who takes appendicitis could be brought at once to the hospital and operated upon by skilful hands we believe the results would be good. But in the country, where neither the hospital nor the skilful surgeon is at hand, we believe the treatment that will save most lives is rest, opium, and cold or hot applications. No salts, no purges, no enemas, except in selected cases, and when got at the very first; but rest, absolute rest: everything to limit the morbid process. If abscess forms or any residue of trouble remains, send the patient to the hospital for treatment: *secundum artem.*

Antiseptic technique enables the country doctor to undertake fearlessly and successfully many minor operations which formerly would not have been attempted, and to save portions which formerly would have been sacrificed. Perhaps few men now in country practice have ever amputated a limb. The hand mangled by the threshing mill, or gun-shot wound, is no longer removed by amputation through the arm, but everything not absolutely destroyed is saved. Such things as the removal of growths, cysts, or tumors from accessible regions; excision of a cancerous breast and clearing out of axillary glands, aspirating a pleurisy, ascites, or a distended bladder; also excision of tonsils, clearing out adenoid growths, opening abscesses, evacuating an empyema, herniotomy, curetting operations, and the treatment of external wounds of all kinds, are operations within range of his powers. A few of my confreres have even ventured on operations involving laparotomy. Other good men avoid the use of the knife whenever possible, and either call in the services of a friend with surgical tendencies, or send the patient down to the city, according to circumstances.

In the country a doctor must keep a stock of drugs and supplies of all kinds. He dispenses his own medicines, and has all the advantages and disadvantages which that system involves. Even here there is some improvement on older customs. Prescriptions are no longer put up in old patent medicine bottles, or such like, with directions written on a bit of foolscap and pasted on, and the whole wrapped up in a piece of old newspaper. The man of to-day uses neat prescription bottles, with appropriate, business-like labels, and wraps them up in white drug paper. His supplies need never run low, for his office is visited at short intervals by agents representing drug and instrument houses eager to take orders for their respective lines of goods. In this connection there is a noticeable difference between English and American business methods. The representative of the English house, or rather its Canadian branch, comes along with note book and pencil and quietly takes down the order as given to him. Perhaps he modestly asks if there is anything else. The American, on the other hand, carries a handsome case of samples which fairly sparkles inside with goods put up in the most attractive forms. He frequently leaves samples of the newer drugs or compounds, the merits of which he dilates upon, explains how they are made, with other points of interest, tells what large sales they command, and so forth. He leaves or send descriptive literature, with an elegant price list, and generally takes away a good-sized order. Thus we see, in a small way, how American enterprise beats the Briton on his own territory.

In the matter of surgical instruments and devices of all kinds for facilitating the diagnosis of diseases and relief of the same, the man of to-day has advantages beyond anything his predecessors ever imagined, as regards beauty, utility, and price.

As to fees—if we dare mention the subject: the man of wealth, the altruistic physician with a wide fame and a lucrative practice may ignore the question of fees, but for the average country doctor they are an important consideration. They mean food and clothing ; they mean a living.

Here is a list of fees which forms a sort of basis for charges in our part of the country. I quote a few, sufficient to show the great difference between city and country on this point.

Office consultation and medicine	.75 cents.

As a rule, if we do not give the patient a bottle or something he will not consider that we are entitled to any pay at all.

Examination of the chest	$1.00
Visit and medicine in the village	1.00
Subsequent visits	.75
Visit three miles distant	2.00
Ordinary confinements	$5.00 to 10.00
Forceps cases	2.00 extra.

To poor people, and they are numerous, the customary charges are still lower. Fees for surgical work of special character are somewhat better, when people are able to bear them.

A doctor's gross income will range from $1,000 to $5,000 a year, according to the volume of his practice. A man who takes in $2,000 or more in a year is considered to be doing well, and compared with the salaries of other professional men in the country, it is very fair indeed. A curious thing about country practice is that a new man acquires a certain clientele almost at once, and in a few years may reach his maximum. Indeed, such are the limitations of country practice that a man may be doing as well, or almost as well, financially, within five years of commencing as he will do after ten or twenty years of experience.

One of the drawbacks of country practice is the lack of mental stimulus. Medical books and journals are within his means, but he misses the active, sharpening influence of the medical society, with its papers, specimens, and discussions.

He can seldom afford to take a long holiday; small fees will not allow it, but this is compensated for by the fact that he is much less in need of holidays than his over-worked city brother.

Usually the doctor's work is pleasant enough, but there are trying experiences peculiar to work in the country. Here is a case. About ten o'clock in an evening late in March we are called to a case of confinement near the shore of the St. Lawrence, ten miles distant. The roads are breaking up, the *cahots* are beyond description, but we reach our destination in due time. Our patient is a xvii para. This is her fourteenth full term pregnancy, and she has had three premature deliveries. The child has been born for half an hour or so. The woman, for some unexplained reason, is lying on the floor in a narrow space between one of the beds and an old bureau in the small room. She is flowing freely and is lying in a mixture of blood, fæces, and water. The only assistant is an inexperienced and timid neighbour woman. There is one smoky lamp to light up the midnight gloom, but there is no boiled water, and the only wash basin available is a much worn granite-ware article used for general purposes in the kitchen. We hastily shed our coat and administer a dose of ergot by the mouth, being obliged to stand with one foot on each side of the woman's limbs, so narrow is the space. Then quickly preparing the bed with a rubber sheet and a folded quilt we get the woman on to it with some difficulty, for she is pretty well exhausted. Getting rid of the mess we proceed to extract the placenta. But it won't come. There is inertia and continued flowing. We excite some irregular contractions, but our best manipulations fail to effect their purpose. The horrid gurgle of the life blood continues at intervals, the pulse is weak and face pallid. Moments are precious. That placenta must be removed, and that very soon, or we shall have a corpse on our hands. We get such water as we can, rinse the battered dish, throw in a bi-chloride tablet and more water. There is no time for antiseptic technique, but we clear the vulva, roughly cleanse hand and arm, empty vagina of clots, pass the hand within the uterus, and endeavour to separate the placenta. Easy enough in theory, easy in text-books, sometimes not extremely difficult in practice, especially with intelligent assistance, but only those who have been in a similar position can appreciate a situation like this. The exertion has a powerfully diaphoretic action—on the operator. But we eventually succeed in clearing out the womb, and the hæmorrhage ceases. None too soon, for our patient is sighing, begging for water, and almost pulseless from anæmia and shock. We raise the foot of the bed, remove pillows, admit air, inject a warm saline solution into the colon, and stand at guard until things have improved. As we jog along our homeward way towards 3 or 4 a.m., feeling the effects of the general tension, we think of our revered professor of obstetrics, our old classmates who are more fortunately situated than we are, and wonder if they would acknowledge us as belonging to the same species.

We return on the third day—perhaps we should have gone sooner—and we find that our profoundly anæmic patient has fever, and there is a putrid discharge from the uterus. With set jaws and deep inspiration we prepare for further fight. We are better provided with utensils this time, and we have time to get things in order. The uterus is irrigated and gently curetted to remove debris. We find that our patient has been a handsome woman, of natural refinement, and comes of a very respectable French-Canadian family. The farm is valued at $4,000, but is only a little more than half paid for, and until it is many household comforts must be done without.

For the next three mornings we rise very early, get ready our horse and sleigh and take advantage of the crust on the roads to expedite our travel. The case yields to treatment, and the woman is saved.

The country practitioner cherishes a strong regard for his former professors, and when he meets a case that is beyond his powers his thoughts turn with all confidence to some of them for help, and if he can secure the same it affords him great satisfaction. Nor is the satisfaction lessened if his patient is able to pay a handsome fee for the extra skill.

Toward his confrères in the country his attitude is usually friendly. He is at least on working terms with all of them. He is not always a model of perfection, and may sometimes forget the Golden Rule. I have known of one or two instances in which professional malevolence produced far-reaching and long-enduring mischief. But this is the dark side of the shield; the other side is bright with deeds of kindliness, and of help in times of trouble. Long drives undertaken in darkness and storm; hours of watching by the sick bed when the doctor himself, or someone dear to him, has become a patient; arguing against a gloomy prognosis, fighting disease, giving comfort and cheer. Cases could be multiplied where a doctor has given his best services to his neighbour and rival throughout a serious illness, and helped to restore him back to health and practice again.

CASE OF TUMOUR OF THE SUPERIOR MAXILLA.

BY

CHAS. F. FORSHAW, LL.D., F.R.S.I.,
Doctor of Dental Surgery of the Baltimore College of Dental Surgery; and Honorary Dental Surgeon to the Bradford Orphanage for Boys, etc., etc.; Graduate in Pharmacy, Apothecaries Hall, Ireland; Member Royal Society, Dublin.

Miss B. D., aged 29 years, a lady of healthy appearance, came to me some twelve months ago to ask my advice as to what should be done with respect to a swelling on the left upper jaw. The tumour was about the size of a pigeon's egg, had first made its appearance some twelve months prior to her visit to me, and gave to her face an ugly asymmetry. Its situation upon the jaw was eight lines from the alveolar margin. It was slightly lobulated, sessile, and gave to the finger a sense of slight pulsation. Its origin could not be directly traced to the peridental membrane lining the alveolus, in connection with any decayed teeth. In general appearance the body suggested gumma, epulis of an unusual form, or epithelioma. The patient had been treated with potassium iodide without benefit, and there was no history or symptoms pointing to a specific origin. There were no glandular enlargements at the angle of the jaw or about the triangles of the neck. The growth appeared to spring from the labial surface of the alveolar process. Its development had been very rapid for the last three months, and was quite unaccompanied by any form of ulceration, nor was there any pain.

Miss D. had worn a partial upper vulcanite denture for some years, which was displaced so much as to show some of the natural teeth in both the superior and inferior maxilla, owing to her being unable to quite close the mouth on account of the protuberance of the tumour.

In January of last year, the patient having been prepared, chloroform was administered by means of Junker's inhaler, Mason's gag inserted in the mouth, the cheek retracted, and everything placed in absolute readiness. Mr. P. Lodge, F.R.C.S., with my assistance, removed the growth with one sweep of the knife. There was much hæmorrhage, one or two vessels having to be picked up by catch forceps and tied. The actual cautery (the circular flat button) was now freely applied to the base of the ulcer so produced. This process was pushed so as to destroy the tissues right down to the bone, some of which was gouged away and removed. The wound was plugged with iodoform gauze and the patient allowed to recover from the anæsthetic, after having been under its influence less than a quarter of an hour. The total quantity of chloroform used was one drachm.

In seven days the lady's face had resumed its normal appearance; she was much brighter and had even increased in weight. We also, at the same time, excised the edge of the scar where the alveolar process adjoined the mucous membrane, which had a slightly suspicious feel of rigidity, the portion removed being about three-quarters of an inch in length by an eighth of an inch in breadth. I saw her again on the following week, and on this occasion the healed surface had quite a healthy appearance. There has been no return of the condition up to the present, March 21st, 1902, when I last saw her.

On examination, the tissue removed, in a recent state, had a fibrous appearance, containing numerous vessels, some of which were of large size. It presented microscopically many thin-walled blood channels, lying in a stroma of spindle-shaped cells, among which could be discerned a few of myeloid type, certainly suggestive of mild sarcomatous malignancy.

A CASE OF MYIASIS AURIUM.

BY

F. J. CHRISTIE, M.D., Minnewaukan, N.D.

While in Leeds, N.D., acting as *locum tenens* for a practitioner of that place, the following case came under my notice, and is, I think, worth being put on record.

X., male, aged 15 years, had had scarlet fever at the age of three years, followed by a double otitis media, which became chronic, with acute exacerbations, at irregular intervals. For the past twelve years the disease has been neglected.

On the night of July 10, 1902, he suffered severely from pain in the right ear, and in the morning noticed some bloody discharge on the pillow. The pain continued throughout the forenoon, and in the afternoon I was called to see him.

On examination, his hearing was found very much impaired, so much so that he could hear a watch tick only when it was pressed against his ear. A little thin, yellow pus oozed from the left ear, while more, which was bloody, came from the right ear. Both drum membranes were perforated, and in behind the right drum I could see something moving. With considerable difficulty, using hydrogen peroxide and boracic acid solution, I succeeded in removing several larvæ measuring from $\frac{3}{8}$ to $\frac{5}{8}$ of an inch in length.

I kept up the daily use of hydrogen peroxide and boracic acid solution, and when I last saw the patient his hearing was so improved that he could hear the watch ticking at six inches. His hearing was much better than it had been during the previous six years.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Tubercular Peritonitis.

FREDERICK C. SHATTUCK, M.D. "The Prognosis and Treatment of Tubercular Peritonitis." *Amer. Jour. of the Medical Sciences, July, 1902.*

Dr. Shattuck's paper is based upon 98 cases observed in the Massachusetts General Hospital. It is a valuable contribution to this subject and serves to emphasize the fact that what was not long since regarded as a fatal disease may now be considered hopeful, ending as it does in a fair percentage of cases in recovery.

The writer's conclusions are that "the mortality, when based on the condition of the patients at discharge, is 13.2 per cent. The mortality of the same series of cases after a period of from two to eleven years is 47.3 per cent. The ultimate mortality of patients in this series under medical treatment is 68 per cent., under surgical treatment, 37.5 per cent. Two patients have had recurrence but are now well. None of the other patients at present report themselves as suffering from the disease."

Dr. Shattuck states the main therapeutic lessons derived from the analysis under the following heads:—

(1) Tubercular peritonitis may be followed by apparently complete recovery even if complicated by tuberculosis elsewhere, either under (a) purely medical treatment, (b) tapping, (c) incision.

(2) As in other forms of internal tuberculosis, the best obtainable hygienic surroundings are all-important. Consequently no patient should be kept in hospital longer than is necessary, especially if more and better air can be secured outside with proper care and food.

(3) We are warranted in trying medical treatment for a time especially under first rate hygienic conditions, tapping the abdomen if there is sufficient fluid to cause discomfort.

(4) If the patient, under a month or six weeks' medical treatment, fails to improve, or in even less time, if he seems to be losing ground, surgical treatment should be advised.

Pneumococcus Arthritis.

Herrick, Jas. B. "Pneumococcus Arthritis." *Amer. Jour., Med. Sciences, July, 1902.*

The conclusions of this paper are so comprehensive that they are here reproduced verbatim.

(1) Pneumococcus arthritis is a rare affection found oftener in men and sparing no age.

(2) It appears oftenest during or shortly after croupous pneumonia, sometimes as late as the third week after the crisis.

(3) It may be primary in the joint, and severe and even fatal constitutional symptoms may result from the toxæmia thus induced. In these cases of primary pneumococcus arthritis, pulmonary localization may or may not occur.

(4) Previous damage to a joint, as by trauma, rheumatism or gout favours the localization.

(5) The lesions may be limited to the synovia or may be more extensive, involving the cartilages and bones. The periarticular structures may be involved. The subacute cases are sometimes highly destructive to the joint, and the same is true of some of the acuter ones.

(6) The lesions are usually mono-articular (61.5 per cent.), the larger joints being oftenest involved. The knee is the joint most frequently affected. The joints of the upper extremity are affected a little oftener than those of the lower, but the difference is insignificant.

(7) The condition is recognized by the ordinary signs of an acute or chronic inflammation of a joint. Exploratory aspiration with bacteriological examination of the fluid is the only means of recognizing the pneumococcic nature of the inflammation. The gonorrhœal arthritis and periarthritis have to be carefully excluded as well as the arthralgias following pneumonia.

(8) The prognosis is grave (mortality 65 per cent.) largely because of the accompanying bacteriæmia and involvement of the more vital parts of the body (meninges, pleura, pericardium, etc.). Yet spontaneous recovery occasionally follows even where there is purulent exudate.

(9) The cases of suppurative pneumococcus arthritis should be treated by immediate incision and drainage. Serous arthritis may often be healed by aspiration, rest and compression.

Treatment of Pneumonia.

WILCOX, REYNOLD WEBB, M.D. "The Treatment of Pneumonia." *Ibid, Sept., 1902.*

In addition to pertinent remarks upon the therapeutic agents in common use in combatting pneumonia, Dr. Wilcox refers to the administration of fairly large doses of creosote carbonate, as recommended by Cassoute and Corgier, who claimed that relapses and sequelæ so frequently seen under other methods were entirely absent. Upon the whole this method has been followed by good results; for, from the evidence brought forward, it appears that creosote carbonate cuts short or aborts a large percentage, mitigates almost all the rest, and in a small percentage of cases produces no results.

Dr. Wilcox's experience includes 33 cases with no deaths, 24 of which terminated with a crisis. Creosote is regarded as nullifying bacterial activity and its results. In summary, the writer presents the present status of the treatment of pneumonia.

(1) Continuous, perisistent and generous administration of creosote carbonate.

(2) Careful adjustment of mechanical conditions.

(3) Thorough evacuation of toxins by all possible ways.

(4) Temporary supplemental oxygen by inhalation.

(5) Liquid diet until physical signs disappear.

Spontaneous Non-Tuberculous Pneumothorax.

FUSSELL AND RIESMAN. "Spontaneous Nontuberculous Pneumothorax." *Ibid, Aug., 1902.*

Spontaneous non-tuberculous pneumothorax is here defined as "pneumothorax occurring suddenly in individuals without the cause being discoverable by physical examination or by the history of the case, and in which there is rarely formation of liquid."

In the statistics showing the etiology of penumothorax, tuberculosis stands far ahead of all other causes put together, being present in from 80 to 90 per cent. In the oft-quoted table of Biach, published in 1880, out of 918 cases, 14 are uncertain as to cause, and among these there are a few so-called spontaneous cases. Even these have been thought to belong to those due to tuberculosis. Post-mortem examination of some of these cases, however, shows that tuberculosis is not present. Then, the tuberculin test in three other cases failed to give any reaction, and hence they were classed as non-tuberculous. To these are added the two cases given in detail in this article.

In the first, previous good health, normal temperature throughout the attack, the negative finding in the organs, and the prompt healing of the condition with seven years of subsequent good health, warrant the belief that the case was non-tuberculous.

In the second case, pneumothorax occurred apparently during a violent fit of coughing, during which he experienced severe pain in the right side. He was a teamster who drank considerably and was exposed to bad weather, and for a month previous to the fit of coughing just mentioned, he had been the subject of cough. He presented unmistakable signs of pneumothorax. After remaining a week in the hospital he went out improved, and when examined three months afterwards he was "entirely well, the breath sounds being normal and equal over both lungs."

The writers of this article have collected from the literature 56 cases which appear to belong to the class of spontaneous non-tuberculous pneumothorax.

Among many interesting points which a study of these cases has brought out, a few may be mentioned Men are more frequently affected than women, and those between twenty and forty years of age. The duration of the condition varies from a few days to three years, the average being from six to eight weeks. It is probable that violent exertion is the usual exciting cause. Recurrence took place in six of the cases tabulated. In one of these cases the opposite side was involved in the recurrent attack. In one case there were three recurrences, thus four attacks at intervals of six, two, and six years.

In discussing the cause of these non-tuberculous cases of pneumothorax, the reasonable view advanced is that the rupture of the lung occurs through an emphysematous vesicle, and this in a lung which is practically healthy. A strong point in favour of the view that these cases are not tuberculous is the fact that fluid is rarely formed, they are simple cases; whereas the tuberculous cases in the large majority promptly show some signs of fluid in the pleural cavity.

Rest and strapping of the side, and in urgent cases, aspiration, are recommended. Nine cases were aspirated. Only one case in the series died, and in this the autopsy revealed the condition.

Conclusions:—(1) Spontaneous non-tuberculous pneumothorax occurs in healthy individuals. It is rare. It is most common in young men.

(2) The pneumothorax is simple, *i.e.*, there is no formation of fluid.

(3) There is rarely any febrile reaction except, perhaps, in the very beginning.

(4) There is probably a moderate amount of emphysema in the lungs which is not recognized during life and is not incompatible with health.

(5) Aspiration is a certain and safe means of relief, and should be resorted to in severe and prolonged attacks.

(6) This form of pneumothorax is benign. *W. F. Hamilton.*

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron, 903 Dorchester street, Montreal.]

(Received up to September 10th, 1902.)

Canada Medical Record (Montreal).

April, 1902.

1. Retrospect of Laryngology. GEO. T. ROSS.
2. Notes from the Case-Book of a General Practitioner. F. W. CAMPBELL.
3. Procedure in Post-Mortem Medico-Legal Examinations. C. A. HEBBERT.

May, 1902.

4. Some Medical Fallacies. W. R. FAIRFIELD.

The Canada Lancet (Toronto).

May, 1902.

1. Gastro-Jejunostomy. J. A. GRANT.
2. Diphtheria of External Ear. G. H. CARVETH.
3. Treatment of Chronic Prostatic Enlargement. J. W. SHAW.
4. The Skill of a Paget. H. S. HUTCHISON.

June, 1902.

5. An Important Malpractice Decision. HON. JUSTICE FALCONBRIDGE.
6. Practical Points in Life Insurance Examinations. S. M. HAY.
7. A Case of Acute Nephritis. JOHN HUNTER.
8. Acute Insanity. ERNEST HALL.
9. Surgical Treatment of Empyema. J. L. TURNBULL.
10. Hysterectomy for Uterine Fibroids. W. E. MCKAY.

July, 1902.

11. Management of Nasal Obstruction. PERRY G. GOLDSMITH.
12. Treatment of Results of Infantile Spinal Paralysis. C. L. STARR.
13. Fractures of Shaft of Femur. HADLEY WILLIAMS.
14. Malignant Œdema of Hands. M. CHISHOLM.

August, 1902.

15. A Case of Tetanus. THOMAS WYLIE.
16. The Treatment of Pneumonia. J. C. MITCHELL.
17. Cancer of the Breast. T. K. HOLMES.
18. Kempffer v. Conerty. HON. JUSTICE MACMAHON.
19. Education and Self-Control. W. H. HATTIE.
20. Nasal Obstructions. PERRY G. GOLDSMITH.

September, 1902.

21. Chronic Intestinal Obstructions from Appendicitis. A. PRIMROSE.
22. Cæsarian Section, Gastrohysterotomy. N. E. MACKAY.
23. Hernia of the Bladder. E. R. SECORD.
24. Lymburner v. Clark and Hopkins. HON. JUSTICE FERGUSON.
25. Appendicitis, a Plea for the Surgical Treatment. D. C. VANWART.

1. GRANT relates the history of a man upon whom he had performed gastro-jejunostomy for extensive cancer of the pylorus.

2. CARVETH reports the case of a man who had diphtheria of the external ear. The patient had had a scratch on the ear and a piece of skin torn off. Four days later there was considerable swelling, and the appearance was that of erysipelas. On a swab taken from the ear diphtheria bacilli were found, but none were found on a swab taken from the throat. Bacilli were still present at the end of the twenty-fifth day, but not on the twenty-seventh day. Ulceration and membrane formation were both present. The treatment consisted in isolation, the ear being washed in a solution of bi-chloride of mercury, 1-1000, and tied up in a carbolic acid solution, 1-40.

3. SHAW considers that in ordinary cases of prostatic enlargement, in which obstruction is not great and the power of the bladder is fair, and there is not an excess of residual urine, or if the use of the catheter is easy and painless, and the cystitis is not severe, but controllable with antiseptic washing, operative treatment is not indicated. But in cases that are not so governed operation is essential, and he considers that the complete enucleation is the operation of choice. He proceeds in the following manner: the patient is placed in the extra lithotomy position, the middle finger of the left hand is placed in the rectum and pressed against the urethra at the membranous portion. An incision is made in the median line through the raphe to apex of the prostate. The capsule is opened and kept open with retractors, which force the gland forwards. The organ is then pulled out with the fingers and removed piece by piece with a gouge, similar to that used in post-nasal growths. The entire prostate is removed in this manner, a drainage-tube covered with gauze is inserted for three or four days, after which the parts are kept perfectly clean. His results with this method have been excellent.

8. **Hall** relates the history of a woman who had an attack of acute mania associated with badly decayed teeth and an alveolar abscess. Chloroform was administered and the teeth removed, and upon recovering from the anæsthetic the patient was rational for the first time in weeks. After six hours the delirium returned, but disappeared under forced sleep, again to appear for a few hours on each of four successive days. The mind became normal with the healing of the gums.

10. **Mackay** relates the history of a woman upon whom he performed hysterectomy for two large uterine fibroids.

11. 20. **Goldsmith** describes the various forms of obstruction that are met with in the nasal passages, and the methods of treating them.

12. **Starr** considers under four heads the treatment of the deformities and disabilities resulting from infantile spinal paralysis. (1) Cases which may be treated by mechanical supports; (2) cases where mechanical supports may be employed advantageously only after tenotomy; (3) cases where the attachment of active muscles may be transposed, so as to allow them to act to better mechanical advantage; (4) cases where so little muscular tissue is left as to be useless for support and where supports are not advisable.

13. **Williams**, in answering the question, "What constitutes a good result in fractures of the thigh, in the opinion of the expert called to the witness-box in cases of malpractice?" after leaving out extraordinary conditions, following compound cases with suppuration, concludes:—That more or less shortening is uniformly the result even in the most favourable cases; that as overlapping of the fragments is nearly always inevitable, one inch constitutes a good result, less than one inch excellent; that slight limping shows shortening of about an inch due to tilting of the pelvis to the injured side, is not to be considered unfavourable as a result of oblique fractures; that slight stiffness of the joints and atrophy are inevitable in most cases, and are of minor importance when bony union has occurred without deformity; that a labouring man will lose forty per cent. of his working power to the end of twelve months, and twenty-five to thirty per cent. for the rest of his life; that slight eversion deformity, if present with good bony union and the ability to walk, are inevitable in some cases, no matter how carefully treated; that age is a great factor in giving an opinion, for under 18 years a better result may be expected than in strong muscular adults; and, that a final judgment should not be given for twelve months. The surgeon himself should be prepared to state that he has used some approved method of extension and counter-extension; that side splints or a cast have been used to prevent lateral movement of the fragments;

that some method has been adopted to correct eversion and external rotation of the limb; that measurements were applied at the time of the injury and repeated at frequent intervals up to the end of the twenty-fifth day by tape or steel, or by the correct surgical methods; that he was careful in recognizing and considering the constitutional condition of the patient, as bearing upon the results, during the treatment ; and, finally, he should give a guarded prognosis at the time of the injury, keeping in mind the tendency to non-union, shortening, deformity and loss of working power, in all oblique fractures of the thigh.

14. Chisolm relates the history of a case of malignant œdema of both hands. The man's hands were saved by free incisions into the œdematous swellings and the constant application of acetozone, which is a most powerful hyper-oxide and germicide. The pathologist's report shows that a bacillus that was isolated from among others was that of malignant œdema.

15. Wylie tells of a girl of fourteen who wounded her foot with a rake, and who twenty-one days later presented the symptoms of tetanus. She was placed in an open tent, and 10 c.c. of anti-tetanic serum was administered on three occasions. Chloral hydrate, in 30 gr. doses every four hours was given until the spasms became less frequent and severe. The result was entirely satisfactory.

17. Holmes reports three cases of cancer of the breast, the first of which shows that even in an advanced stage a cure may be possible, and in the other two cases the influence, negative and positive, of removal of the ovaries upon the disease.

21. That chronic intestinal obstruction may be caused by bands of adhesions following appendicitis is illustrated by a case, the history of which is related by Primrose. A child of ten years old had symptoms of general peritonitis and acute obstruction, the origin of which was obscure. Appendix trouble was suspected, but no certain diagnosis was made. She recovered from the attack without the operation, but subsequently developed symptoms of chronic intestinal obstruction, which occasionally gave rise to alarming conditions, during which the obstruction threatens to become complete. During these occasional seizures she suffered intense pain, the abdomen became distended, and she only obtained relief after a free action of the bowels. These occasional attacks were considered sufficiently serious to warrant operation. The abdomen was opened a few days after the recovery from one of the attacks, and the condition investigated. It was found that there were two kinks in the small intestine and that the appendix was adherent to the point of attachment of the peritoneal adhesions, which were the

cause of the kinking. The intestine was freed and the appendix removed, after which the patient made a good recovery and subsequently the symptoms of obstruction no longer manifested themselves.

22. MACKAY reports the history of a woman upon whom he performed Cæsarean section for contracted pelvis. The patient died three days after the operation evidently from intestinal obstruction.

23. SECORD reports the history of a man of seventy-three years of age who has suffered from a hernia for forty years. It had become strangulated, and the mass, on the right side, was large, very tense, exceedingly painful, and resisted every effort at reduction. Upon opening the sac, it was found that the inner wall was composed of two layers, which, with the thumb inside the sac and the fingers outside, could be moved the one over the other. A temporary catgut ligature was placed around the neck of the sac and an incision was made from without inwards towards the two layers, which, when slightly nicked, separated and exposed a cavity lined by pinkish mucous membrane. This cavity was continued downwards on the inner side of the sac for about four inches. The operator feeling that the cavity was the bladder, closed the opening with Lembert's sutures, and completed the operation. The patient made an uneventful recovery.

25. VAN WART, in a paper on appendicitis, strongly advocates early operation, whether the attack is catarrhal or suppurative.

(To be continued.)

Le Bulletin Medicale de Quebec (Quebec).

Avril, 1902.

1. Mémoire Soumis au Gouvernement Fédéral, au Sujet du Bill Roddick, par la Société Médicale de Québec.
2. Comment le Nouveau Bill Roddick n'est qu'un Leurre. D. B.

Mai, 1902.

3. Radiodiagnostic d'un Cas de Périostite Traumatique. CHS. VERGE.
4. Quelques Cas de Pratique Traités par le Saignée. DR. VOISARD.

Juin, 1902.

1. Congrès de Médecine Français de Québec.
2. Adress de l'Association des Médecins à l'Université Laval.
3. Discours prononcé par l'honorable Adélard Tourgeon.
4. Discours de M. le docteur Brochu.
5. Lutte de la Famille contre Tuberculose.

Juillet, 1902.

6. Contribution à l'étude de la Grossesse Extra-Uterine basée sur 14 observations personnelles. L. COYTEUX PREVOST.
7. Retention Placentaire Prolongé. EUGENE MATHIEU.

6. DR. PREVOST records the following case in his series of uterine pregnancies:—

T.B., aged 33, married eleven years, one child ten years of age, no miscarriages. Menstruation regular until two years ago, when there was suppression of the menses for four months. There were no signs of pregnancy during this time, but she suffered considerably from abdominal pain, with a feeling of weight in the vagina and leucorrhœa. At the end of the fourth month the menses reappeared without any symptom of miscarriage, and continued regularly. She suffered more or less pain, however, in the region of the left ovary. Two years later she missed her period in September, and towards the middle of October she began to suffer from abdominal pain, which became so severe that she had to take to bed at the beginning of November. The pain was felt principally on the right side.

Examination per vaginam revealed a tumour occupying Douglas' pouch and lying to the right. A smaller tumour could be felt on the left side higher up. On opening the abdomen a lithopedion of two inches in length was found lying free in the abdominal cavity attached by a few adhesions to the intestines. In the left tube a small yellow mass was seen, evidently the site of the growth of the ovum.

The large tumour proved to be a second extra uterine fœtation, lying between the layers of the broad ligament. Rupture of this tumour gave exit to a large quantity of blood clot. The ovum was lying in the mass of clot, and rupture of a smaller sac allowed of the escape of a small amount of amniotic fluid, and a fœtus four inches in length which was evidently living.

The author states that he has been able to find only one other similar case recorded,—G. H. Ferguson, *Edinburgh Medical Journal,* February, 1899.

La Revue Medicale du Canada (Montreal).

2, 9 Avril, 1902.

1. Les Perforations Intestinales et leur Traitement. HENRI LASNIER.

16 Avril, 1902.

2. Quelques Notes sur l'Hydrothérapie. CHAS. DEBLOIS.

23, 30 Avril; 7 Mai, 1902.

3. Des Ulcérations Vésicales et en Particulier de l'Ulcère Simple de la Vessie. RENE LE FUR.

14 Mai, 1902.

4. La Fumée de Tabac en Bactériologie. G. DESPREZ.

21 Mai, 1902.

Correspondance Parisienne.

28 Mai, 1902.

5. De l'Emploi de l'Ophthalmomètre dans le Diagnostic des Erreurs de Réfraction. ST. JOHN ROOSA.

4, 11, 18 Juin, 1902.

6. Faut-il Former les Jeunes Gens qui se Destinent aux Professions Libérales par l'Etude des Humanités ou par l'Etude des Sciences. L. E. FORTIER.

2 Juillet, 1902.

1. D'importance qu'il y a de donne aux élèves en médecine un enseignement pratique sur les différentes méthodes d'anesthésie. M. T. BRENNAN.

9 Juillet, 1902.

2. Notes sur la transmission des maladies vénériennes par les sièges des latrines. M. T. BRENNAN.

16 Juillet, 1902.

3. La mouche comme agent de propagation des maladies et comme milieu de métamorphose microbienne. M. T. BRENNAN.

23 juillet 1902.

4. Le médecine affilié aux loges et aux associations de secours mutuel, de ses méthodes et de son influence sur la pratique de la médecine. J. C. S. GAUTHIER.

30 Juillet, 1902.

5. Un cas de prolapsus génital total irréductible. DR. RHEAUME.

L'Union Medicale du Canada (Montreal.)

Mai, 1902.

1. L'odyssée d'un typhoïdique. J. A. LESAGE.
2. Rein flottant, foie flottant par lithiase biliaire. O. MERCIER.
3. Deux cas de fracture de la colonne vertébrale. A. MERCIER.

4. Etude critique sur l'emploi du sérum antistreptococcique dans l'infection puerpérale. (*Suite.*) E. A. R. DECOTRET.
5. Une observation de hernie étranglée. E. MONTPETIT.

Juin, 1902.

6. Volumineuse hernie inguinale gauche infectée par la présence d'une grosse arête de poisson. A. MARIEN.
7. Un cas d'empoisonnement par le chlorate de potasse. A. MERCIER.
8. Traitement de la rétention urinaire. E. ST-JACQUES.
9. Etude critique sur l'emploi du sérum antistreptococcique dans l'infection puerpérale. (*Suite.*) E. A. R. DECOTRET.

Juillet, 1902.

1. Les progrès de l'hygiène moderne. E. P. LACHAPELLE.
2. Variété spéciale des cholécystites aiguës suppurées, leur traitement chirurgical. MARIEN.
3. Thérapeutique infantile. S. LACHAPELLE.
4. Traitement de la rétention urinaire. ST-JACQUES.
5. Etude critique sur l'emploi du sérum antistreptococcique dans l'infection puerpérale. (*Suite.*) DECOTRET.

2. The author reports a case of nephorrhaphy for right floating kidney. Some days after operation a movable tumour was discovered in the abdomen, occupying the region where the kidney had been most easily palpated. Further operation revealed a large gall bladder which contained a large quantity of viscid bile and 37 gall stones. The liver was dislocated downwards. The gall bladder was emptied of its contents, including a small stone which had obstructed the cystic duct, and then sutured to the edges of the abdominal incision. The patient made a good recovery, the liver remaining in its normal situation. The various symptoms of which she had complained, dyspepsia, etc., disappeared completely.

6. The patient, a man aged 55, had had an inguinal hernia for many years without suffering any ill-effects from it. The author was called to attend him after he had been suffering for four days from symptoms which pointed to strangulation. Upon cutting into the hernial sac about 50 grammes of sero-purulent fluid escaped. The large bowel was found to be adherent to the sac wall; it was œdematous and was separated with difficulty. In the lower part of the sac a large fish bone was found, which had evidently escaped from the bowel and which had led to the symptoms of strangulation without its being present in reality. The bowel was returned into the abdomen after it had been thoroughly

cleansed, the hernial tract was obliterated, and the patient made a good recovery.

The patient had never been in the habit of wearing a truss, so that the hernia was nearly always down. This explains the presence of the fish bone in the sac, as it probably perforated and escaped from the bowel *in situ*.

7. A child of three years of age having complained of sore throat, its mother gave it a pinch or two of chlorate of potash in half a tumbler of water Almost immediately after taking it the child became breathless, with swelling of the face and neck, lost consciousness, and died 18 hours after having taken the drug.

The autopsy revealed little beyond the prune juice appearance of the blood and of the bone marrow. The bladder contained 50 grammes of dark brown urine. A spectroscopic examination of the blood gave the methæmoglobin test. It was impossible to determine how much of the drug the child had taken, but from the rapidity of the onset of the symptoms the quantity must have been considerable.

Reviews and Notices of Books.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL SOCIETY. Vol. 17. 1901.

These transactions contain a number of papers on climatic conditions in various parts of this continent.

Puerto Rico, its climate and diseases, is described by Dr. C. H. Alden, and includes a short account of the stamping out of smallpox by general vaccination, an achievement reflecting the greatest credit on the American authorities, and forming one of the best recent examples of the efficacy of this procedure. Social conditions apparently offer as much room for reform as sanitary ones, about one-half of the births being illegitimate.

The climates of Augusta, Newport, Nantucket, New England and Southern California are the subjects of papers, and supply much valuable information not readily obtainable elsewhere.

The remainder of the volume is devoted to papers, for the most part referring to diseases of the chest.

These transactions will well repay perusal by those interested in climatology and thoracic disease. *F. G. F.*

ELEMENTS OF PRACTICAL MEDICINE. By ALFRED H. CARTER, M.D., M.Sc. Eighth Edition. H. K. Lewis, London.

The forelying book is a quarto of 580 pages, designed as a compendium of internal medicine for the use of students, and including chapters on general pathology and skin diseases. The fact that it is now in its eighth edition, the first having been issued twenty years ago, indicates a solid if not enthusiastic popularity.

Perhaps the main care on the part of a reviewer of an eighth edition is to see if it has been brought up to date. In the case of the present volume this seems to have been on the whole well done. Nevertheless, the feeling of an older school than the present persists in places. For instance, the treatment of cancer of the stomach and bowel is summarily disposed of thus:—"Treatment is purely symptomatic and palliative." And this in the face of the encouraging statistics of Mikulicz and Kraske, not to mention others. It is seen again in the recommendation of opium in "colic" and in appendicitis of "leeches to the iliac region" and further the remark that operation for appendicitis apart from evidence of sudden perforation and general peritonitis is rarely justifiable earlier than the fourth day.

There are sins of omission as well as of commission. In typhoid fever there is not a word concerning the Widal test, nor concerning operation for perforation. The cold bath treatment is barely mentioned, while " intestinal antiseptics " are strongly recommended. No mention is made of the tuberculin test in the diagnosis of obscure tuberculous lesions, none of the amœbæ in the causation of liver abscesses. The Plague, so important of late years even in Britain, gets but a paragraph or two.

In the reviewer's opinion the chapter on diseases of the skin and on general pathology are both out of place and of minimal use in a compendium, and the space might more profitably be devoted to such questions as those above mentioned.

With these exceptions the book as a whole must be praised. While not neglecting a proper amount of detail it treats of disease in a fairly broad way rarely seen in compendia, and general principles are satisfactorily emphasized. On these grounds it may be cordially recommended to students beginning their courses in clinical medicine.

E. W. A.

THE DIAGNOSIS OF SURGICAL DISEASES. By DR. E. ALBERT, late Director and Professor of the First Surgical Clinic at the University of Vienna. Authorized Translation from the Eighth Enlarged and Revised Eidition by Robert T. Frank, A.M., M.D., with 53 illustrations. New York, D. Appleton and Company, 1902.

Although works on medical diagnosis are published from time to time, the subject of the diagnosis of surgical diseases is for the most part treated only in surgical text-books. As the translator states in his preface " this volume presents to the practitioner and to the student the problems of diagnosis which confront them at the bedside . . . . diseases are grouped according to similarity of symptoms and points of resemblance . . . . conditions which in practice render their differentiation difficult."

It is obvious that all subjects cannot receive attention in a book of 407 pages, the author has nevertheless dealt with many large fields as only a man of large experience could do. Albert's opportunities for clinical observation were exceptionally great, and he ranked high as a clinical teacher.

In the first part of the book is a most satisfactory chapter on the " causes of abnormal positions of the head," followed by the differential points of diagnosis between the various lesions involving the head and upper cervical regions. A chapter is devoted to diseases of the mouth and pharynx and to the injuries to the shoulder and elbow joint. Many points of practical value are brought forward and properly emphasized. The chapter on the differentiation of abdominal tumours is also interesting.

The volume is one that men in active practice will find most useful. A correct diagnosis is of such importance that any aid should be gladly welcomed.

INTERNATIONAL CLINICS: A Quarterly of Illustrated Clinical Lectures and Specially-prepared Articles on Medicine, Neurology, Surgery, etc., etc. By leading members of the Medical Profession throughout the world. Edited by HENRY W. CATTELL, A.M., M.D. Vol. II., Twelfth Series, 1902. Philadelphia. J. B. Lippincott Company.

While we cannot begin to notice all the excellent articles appearing in the current number of the International Clinics, the following may be referred to as more particularly of interest on account of the notice now accorded the subjects by writers in the journals. "Gersuny's Method of Prothesis by Subcutaneous and Submucous Injections of Vaseline" is the title of an article by R. Romme, of Paris, in which he discusses both the tissue changes that follow the method and the conditions calling for its use. Professor Lucas-Championnière furnishes a paper on passive movements and massage for the treatment of fractures. He concludes that the old traditions regarding the treatment of fractures are only adhered to because of the surgeon's fear of being blamed in the event of bad results from what the author calls the only rational method. Albert Robin, of Paris, in an article dealing very fully with simple ulcer of the stomach, believes the following rules should guide in the matter of surgical interference. In simple ulcer without complications, never advise operation. With copious hæmorrhage use medical treatment, and with slight, persistent hæmorrhage resort to surgery. Other complications, such as perforation, subphrenic abscess, etc., require surgical treatment. P. L. Daniel, of London, gives the history of two cases of pancreatic cyst occurring in the Charing Cross Hospital, and which were treated surgically.

Resection of the cervical sympathetic on both sides for the treatment of Graves' disease, epilepsy, glaucoma, etc., is discussed in a copiously illustrated article by Professor Thomas Jonnesco, of the University of Bucharest, who has performed the operation 130 times in the last five years. The diminution in exophthalmos is well represented by the illustrations, and the other cardinal symptoms of Graves' disease are reported to have been in most cases equally benefitted. His experience shows that no serious sequelæ follow this procedure.

SYPHILIS: A SYMPOSIUM. Special contributions by seventeen different authors. E. B. Treat & Co., New York, 1902.

This book comprises a series of articles on syphilis which appeared in the *International Medical Magazine*, and were written by request. Perhaps the most interesting part of the book is the answers to questions propounded by the editor of the magazine to syphilographers, five of whom replied. After reading, and we presume for the purpose of increasing his knowledge, the series of articles on syphilis of the various systems of the body, the reader is rather astounded, on turning to the "Answers," to see the difference thus shown, and may well wonder whether, had they all written on the same subject, would the same diversity have been evident. Question 2 is, "Has the range of remedies in syphilis increased in recent years?" the answers to which are: "Yes," "No," "No," "Not materially," "Yes." Apart from these rather unfortunate discrepancies, the book contains many sensible chapters on various phases of syphilis.

TRANSACTIONS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION at the Twenty-fifth Annual Meeting held at Chicago, May 30, 31, and June 1, 1902. Official Report of the Proceedings, by FRANK HUGH MONTGOMERY, M.D., Secretary. New York. Rooney & Otten Printing Co., 1902.

The transactions for this year form a volume of 216 pages, containing many interesting papers, many of them illustrated with black-and-white plates depicting the skin conditions described. Among the interesting papers are:—A discussion on diseases of the nails; several reports of cases of blastomycetic dermatitis, one by Dr. F. J. Shepherd, the President, of two of his Montreal cases. Dr. G. W. Wende describes a case of lymphatic leukæmia developing under observation, and showing pigmentation and leukæmic lesions of the skin. Dr. W. A. Pusey gives some interesting information regarding the treatment of skin lesions by means of X-rays; Dr. Stelwagon reports an extraordinary case of susceptibility to quinine. The volume is neatly bound in boards and the publishers' work is well done.

DOSE-BOOK AND MANUAL OF PRESCRIPTION WRITING. By E. Q. THORNTON, M.D., Ph.G. Second edition, revised and enlarged. Philadelphia and London, W. B. Saunders & Company, 1901. Canadian Agents, J. A. Carveth & Co., Toronto. Price, $2.00.

This work is intended for the student of medicine. In the revision, addition has been made to the chapters on prescription writing and incompatibilities, and references have been introduced in the text to the newer curative sera, organic extracts, synthetical compounds and vegetable drugs. With many of these one wishes that the author could prophesy how long they would be likely to be considered of sufficient importance, to be retained in a work of this kind. As the title indicates, there is no attempt at any reference to therapeutic action.

Transactions of the Association of American Physicians. Sixteenth Session, held at Washington, D.C., April 30, and May 1 and 2, 1901. Vol. XVI. Philadelphia, Printed for the Association, 1901.

The sixteenth volume of the Transactions of the Association of American Physicians contains more than the usual number of pages, and the papers are of extremely high quality. It is quite impossible to attempt a review of some fifty papers, many of which are of great interest as marking new discoveries in the subjects to which they are devoted. As would be expected, the volume contains papers on almost every department connected with medicine, from experimental researches on the causes of some of the least known diseases to discussions of treatment. The book is well illustrated with coloured and black-and-white plates.

The American Year-Book of Medicine and Surgery for 1902. Arranged with critical editorial comments by eminent American specialists, under the editorial charge of George M. Gould, A.M., M.D. Vol. I., General Medicine; Vol. II., General Surgery. Philadelphia and London, W. B. Saunders & Company; Canadian Agents, J. A. Carveth & Co., Toronto.

This year-book continues to furnish in compact form a short summary of the most valuable contributions to medical literature of each year. Besides this, it has the added value of containing criticisms by competent men on the various departments of medicine. The volumes are sold separately in order to give the practitioner interested in only one of the two great divisions of medicine an opportunity to obtain the work without adding useless bulk to his library.

Gonorrhœal Arthritis: Its Pathology, Symptoms and Treatment. By L. Vernon Jones, M.D. London, H. K. Lewis, 1901. Price, 2s. 6d.

This small pamphlet of fifty pages was written by the author on account of his inability to find any information in existing works on the course and treatment of the disease. While not agreeing with the author in his statement regarding the paucity of literature on this subject, we recognize that he has given us a valuable, short, concise account of this important affection.

Society Proceedings.

CANADIAN MEDICAL ASSOCIATION.

The thirty-fifth annual meeting of the Canadian Medical Association was held in the city of Montreal on the 16th, 17th and 18th of September, under the presidency of Dr. Francis J. Shepherd.

As an evidence of the great success which attended this meeting, the fact that more physicians registered on the first day than for the whole of any previous meeting, speaks volumes.

At the morning general session of the first day a resolution of regret at the recent death of Professor Virchow, which was at the same time one of appreciation for the great work of this eminent pathologist, was proposed by Professor Adami, seconded by Dr. Gardner, Montreal, and carried unanimously.

The meeting divided into sections, Dr. McPhedran, Toronto, taking the chair at the medical section; while Dr. O. M. Jones, Victoria, B.C., looked after the surgical section.

MEDICAL SECTION.

THE FORENOON OF FIRST DAY.

Living Case, Splenic Anæmia.

Dr. H. A. Lafleur, Montreal, presented patient, a man in middle life. There was a tumor—a movable mass about midway between the lower ribs on the left side and the crest of the ilium, with pulsation, but not expansile, over the tumor. The first blood count, made in March, showed 75 per cent. hæmoglobin, the red corpuscles 5,000,000; the white 6,400. A blood count was made again on the 15th Sept., 1902, showing 4,000,000 and 5,800 respectively.

The tumor changed according to degree and distension of the stomach. There was absence of mobility.

Dr. Osler referred to the difficulty in the lack of complete mobility in diagnosing this case and of enlarged spleen being often clinically mistaken for something else. This was just one of those cases in which the diagnosis was more surgical than clinical.

Some Further Results in the Treatment of Tuberculosis.

Dr. J. H. Elliott, of the Gravenhurst Sanitorium, contributed this paper:—

At a meeting of this Association in Toronto in 1899, a report was made upon 155 cases of pulmonary tuberculosis under sanitorium treatment. This paper is a further contribution covering some 400 additional cases treated during the past three years. The nomenclature used in the classification of discharged patients is that adopted by Trudeau: "Apparently cured"; "Disease arrested"; "Much improved"; "Stationary"; and "Failed."

Five years' experience has shown that almost all of the patients discharged "apparently cured" remain perfectly well; of those with "disease arrested" many have progressed to good health at home by following the rules of life learned at the sanitorium, renewed activity of the disease, when occurring, having been as a rule due to unfavourable surroundings, or the necessity of again taking up unsuitable work.

Not the least important part of the work of a sanitorium is its educative influence. Each patient who returns home is a teacher of the value and importance of a hygienic life, to those who wish to retain their health, as well as those who are not strong. Experience is demonstrating the immense amount of influence for good which results from a properly equipped and conducted sanitorium. It is unfortunate that there are not more of them. It is hoped that the attention of our philanthropists will be drawn to the crying need of such institutions, and that ere long we shall have a number of them in the various provinces of Canada.

Dr. Osler congratulated Dr. Elliott on the promising results which he has obtained. Two important points should be kept well in mind: first, early diagnosis; and, second, getting patient as soon as possible under proper professional control.

Dr. T. V. Walker, St. John, N.B., referred to the control the physician in the sanitorium had over the patient.

Dr. John Ferguson, Toronto, spoke of the positive advances that have been made along the line of the curability of pulmonary tuberculosis.

Dr. McPhedran, Toronto, emphasized training patients how to care for themselves at home. He believes, too, that it is true that the neighbourhoods of sanitoria are always areas where tuberculosis is always diminishing.

Pleurisy as Associated with Tuberculosis.

Dr. John Hunter, Toronto, read this paper He first referred to the manner in which bacilli reached the visceral and parietal pleuræ through the sub-pleural, bronchial or tracheal lymphatic glands, and from the cervical, mediastinal and peritoneal lymphatics; also from the tonsils. In arriving at a diagnosis of pleurisy, a vigilant search should be made for a possible tuberculous origin. One should not always consider the outlook gloomy, as with properly carried out treatment, the progress is much more favourable than in pulmonary tuberculosis. In at least two-thirds of tubercular pleurisy it is a curable affection. The rapidity of the filling of the pleural cavity is especially characteristic of tubercular cases.

Dwelling upon treatment, during convalescence, deep breathing should be practised very assiduously, and inflation with rubber bags is a valuable exercise. Then change to a suitable climate should be insisted on if the progress towards recovery be retarded.

Clinical Notes on Blood Pressure in Diseased Conditions.

Dr. A. E. Orr, Montreal. A Gærtner's tonometer was shown, and the manner of its use demonstrated. Four hundred patients at the Royal Victoria Hospital, Montreal, were experimented on. The normal pressure was found to be 110 to 120. Seventy cases of typhoid fever were recorded in different stages, showing an average blood pressure of 104.5 m.m. It was highest, but still sub-normal, in the first week. There was only one death, which took place in a man of 35 years, when pressure was 105 on tenth day, 110 on twenty-first day; then three hæmorrhages, and on the twenty-fourth day a fatal hæmorrhage. A large proportion of these had cold baths or cold sponging.

Nineteen cases of chronic nephritis were recorded. Of this group the highest was 260; average 208.5. Of acute nephritis there were seven cases; only three of these showed high pressure. Of arterio-sclerosis, 27 cases were recorded; highest, 110, 16 being 130 and over; 4 from 130 to 145; 3 from 110 to 125; 4 sub-normal. The highest was in a man of 72; glycosuria, no albumen.

Valvular diseases of heart, 48 cases, including 11 cases of mitral regurgitation. In mitral stenosis 8 cases were recorded, 6 being normal. Mitral stenosis with mitral regurgitation, 14 cases. Eleven had practically normal tension. Aortic insufficiency, 3 cases. Myocarditis, 4 cases, one, man, aged 60, having pressure of 80. Hypertrophy and dilatation of heart of unknown causation, 2 cases, 120 and 110 respectively. There were 18 cases with acute lobar pneumonia, with an average for the series of 92.7 ; only one death. Pleurisy, 16 cases. Neurasthenia, 18 cases, 13 having normal pressure; 3 from 135 to 140; one of 160. In malignant disease, cancer of viscera, there were no high readings. Anæmia, 6 cases, all being normal. Addison's disease, both in early stage; both normal. Purpura hæmorrhagica, one case; normal. Puerperal septicæmia, one prolonged case, ending in recovery; had extremely low blood count, 930,000 ; above normal. One gall bladder case with suppuration, a blood pressure of only 50 ten days before death.

One lead poisoning, 3 of jaundice, 1 of tubercular meningitis; 2 of diabetes; 2 of exophthalmic goitre; 8 of acute articular rheumatism, heart not affected; chronic articular rheumatism, 4 cases, all normal; gonorrhœal rheumatism, 8 cases, 6 normal; rheumatoid arthritis, 16 cases, 6 normal; gout, 4 cases.

There was one case of hemiplegia and 14 of tabes dorsalis, 11 normal pressure; cerebral tumor, 8 cases; general paralysis of insane, 1 case; Friedreick's ataxia, one with albuminuria, 140; one acute ascending paralysis, 140; 2 cases of tic douloureux, one 130 during the attack. There was one case of epidemic influenza and 36 miscellaneous cases.

In discussing this paper, Dr. Osler considered it to be the best contributed article on the subject.

On the Technique of Recording the Venus Pulse.

Dr. W. S. Morrow, Montreal, gave a practical demonstration on the blackboard, and presented a living subject on this topic.

SURGICAL SECTION.

FIRST DAY—MORNING SESSION.

Amputation of the Upper Extremity for Sarcoma of the Shoulder Joint—Living Case.

Dr. J. Alex. Hutchison, Montreal. The patient, a young woman, gave a history of previous injury to the shoulder, followed by the development of a growth in the head of the humerus, accompanied by intense pain. An X-ray of the parts revealed the presence of a large growth which invaded the joint, and involved the scapula. The patient was in an extremely unsatisfactory condition for operation, and presented evidences of marked cardiac disease. The incision extended from the middle of the clavicle in front down over the pectoral regions to the lower part of the axilla, and behind, passed over the scapula down to meet the anterior incision.

After severing the middle of the clavicle, the great vessels were ligated, the brachial nerves divided high up, the muscles divided and the scapula freed from its attachments. There was little hæmorrhage, and the wound healed readily. Microscopic examination of the growth showed it to be a mixed spindle, and round-celled myeloid sarcoma.

A Fatal Case of Secondary Hæmorrhage four days following the Removal of Adenoids.

Dr. Perry G. Goldsmith, Belleville, Ont. This paper deals with the case of a child operated on by Dr. Goldsmith for obstructive deafness due to enlarged faucial tonsils. The operation was not unusual, and the condition of the patient, on the second and third day after the operation, was apparently satisfactory ; on the fourth day, however, repeated and alarming attacks of hæmorrhage set in, resulting fatally in a few hours. There was no history of hæmophilia. The patient was under the care of the family physician at the time of death, and as no post-mortem could be obtained, the cause of the hæmorrhage remained unknown.

Occlusion of Posterior Naris.

Dr. H. D. Hamilton, Montreal. The patient was a young man, aged 17, who complained of constant discharge from right naris, with complete obstruction of the same side. Duration of the condition, about twelve months. On examination, the patient presented a complete bony partition occluding the right choana. Family and personal history was negative. Treatment: The bony wall was perforated, and the opening further enlarged by graduated bougies.

On the Use of the Subcutaneous Injections of Paraffin for Correcting Deformities of the Nose.

Dr. G. Grimmer, Montreal, spoke briefly of various other deformities which had been corrected in this manner. In the preparation of the paraffin, it is first sterilized by subjecting it to high temperature. It is then injected by means of a sterilized syringe. In the case of the nose, the inner canthi of the eyes should be protected from the spreading of the paraffin, by firm pressure applied to the sides of the nose by an assistant's fingers. After injection, the parts are moulded by the operator as required.

After-treatment: Collodion is to be applied to the needle puncture, and cold compresses, to control œdema of the nose and eyelids. Some possible dangers from the treatment are: paraffin embolism, and necrosis of the skin over the parts.

Dr. Grimmer exhibited two patients successfully treated in this manner; also two rabbits which had been subjected to similar injections.

The Telephonic Properties of the Inflamed Abdomen ; a sign not hitherto described, due to Paralysis of the Bowel in Peritonitis.

Dr. Geo. A. Peters, Toronto. In auscultating the abdomen with a view to ascertaining whether there was paralysis of the bowel in cases of appendicitis, typhoid perforations, traumatism, and other conditions which stand in a causative relation to peritonitis, Dr. Peters has observed that where the gurgling sounds due to the passage of gas and liquid in the bowel are absent from paralysis, the heart sounds are invariably very plainly present over the whole abdomen. In intense cases, particularly in children, both inspiratory and expiratory breath sounds may be heard. Dr. Peters' explanation of the phenomena is: unlike the healthy bowel—where the gas is retained in certain well-defined and circumscribed compartments, each constituting a complete retainer in itself, with vital walls possessing a muscular tonicity under nervous control—the paralyzed bowel, by reason of its flaccid and atonic condition, permits an entire change in the disposition of the contained gas: the entire distended abdomen becomes practically and accoustically considered. a continuous column of air or gas, of the precise principle of the stethoscope. The effect of this is further heightened by the rigid abdominal wall, which acts as a sounding board. The prognostic significance would seem to indicate an unfavourable termination in those cases where the sign is very well marked in cases of septic origin.

A Case of Filariasis in Man Cured by Operation.

Dr. A. Primrose, Toronto. A man from the West Indies suffering from lymph scrotum presented himself for treatment, and gave a history of attacks of fever which suggested the presence of filariæ. On examination of the blood one found the embryos present in large numbers. The embryo filariæ were found in large numbers at night, but disapppeared from the blood during the day. An operation was performed and a large portion of the scrotum removed. The excised tissue was carefully examined by teasing it in salt solution, and a parent worm was discovered and removed alive. This proved to be a female, and it was subsequently fixed and mounted in a suitable manner for microscopic examination. Subsequent to the operation the filaria embryos entirely disappeared from the blood, and the inference was that the parent producing the embryos had been removed by operation.

The parent worm was afterwards carefully studied by Dr. J. H. Elliott, M.D., Toronto (late of the Malaria Expedition to Nigeria from Liverpool School of Tropical Medicine), and a report of his investigations, with drawings of the worm, formed a part of the paper as communicated by Dr. Primrose.

GENERAL SESSION.

FIRST DAY—AFTERNOON.

Address in Surgery—The Contribution of Pathology to Surgery.*

Dr. John Stewart, Halifax, N.S. Owing to the unavoidable absence of Dr. Stewart, this paper was read by Dr. J. W. Stirling, Montreal. In this able address, Dr. Stewart, in commencing, compared the struggles of the early surgeons for a scientific knowledge of their craft, to the daring exploits of the early navigators of the fifteenth and sixteenth centuries—a parallel not altogether fanciful might be drawn between those pioneers of ocean travel and the early masters of our craft. They worked on two lines, the long, weary, and often fallacious track of Empiricism, and the ample, but often disconnected road constructed by those whose chief aim was, in the words of him who led the vanguard, to "study and search out the secrets of Nature."

---

* Published in the September number.

The first advance came with the anatomist, Vesalius, "and day dawned with William Harvey, the Columbus of modern medicine," when he instituted the application of experimental methods to biological questions.

Finally came John Hunter, "the Father of Scientific Surgery," of whom Billroth says: "From the time of Hunter to the present, English surgery has had something of grandeur and style about it."

But a great advance came from the study of plant life, and the researches of Schwann and Schleiden paved the way for the cellular pathology of Virchow, the basis of our present system of pathology. "And," said Dr. Stewart, "a shadow falls upon us gathered here, as we realize that the veteran master, the undisputed leader of pathological thought and progress for over fifty years, has fallen, and we unite in the desire to lay our spray of cypress on the tomb of him whom we all considered the greatest German of our time."

While with all these new acquisitions the pathologist went on his way rejoicing, the surgeon still lingered with anxious mind and heavy heart, for the question of questions to him was still unanswered,—the healing of wounds was the enigma of surgery.

By the close of the eighteenth century, many scientific workers were satisfied the solution of this problem lay in the existence of pathogenic microbes, but it was reserved for Schonlein to prove in 1839 that tinea was due to the growth of a fungus. Later came Davaine and Chaveau, with their demonstration of the bacillus of anthrax.

And finally came Lister. "And," said Dr. Stewart, "the dark hemisphere rolled in one grand movement from its age-long penumbra into noon-day. Surgery, modern surgery, was born. In the chronology of our craft, time is divided into Before and After Lister."

Lister, like Hunter, united in himself the pathologist and the surgeon, and, like him, worked on the lines of experimental pathology.

President's Address.*

On the evening of the first day, in the Arts Museum, Dr. Francis J. Shepherd, of Montreal, delivered the annual presidential address.

---

* Published in the September number.

SECOND DAY—FORENOON.

General Meeting.

Discussion on Diseases of the Gall Bladder and Bile Duct.

DR. ALEX. MCPHEDRAN, Toronto, introduced the *Medical Diagnosis* in this discussion. He mentioned the fact that the gall ducts are narrower at their entrance to the bowel than in other parts of their lumen, and as they lie nearly horizontally, the outflow of bile is easily retarded or obstructed. The ducts are much exposed to infection from the intestinal tract. Of the cardinal symptoms in these cases. Dr. McPhedran considered jaundice the most common, while pain varies but is generally intense. The attendant fever is generally due to toxic absorption. The main diseases to be considered in differential diagnosis, are, catarrhal and suppurative cholangitis and acute yellow atrophy. Most catarrhal conditions are infective, but the chills and fever may occur without pus formation. The most common germ present is the common colon bacillus. In the gangrenous cases the symptoms are often ill defined. A most characteristic sign of gall stones is the recurrence of the attack.

DR. A. D. BLACKADER, of Montreal, in discussing the *Treatment* of gall bladder affections, said he would confine himself principally to the catarrhal forms of the disease. He considers the condition more commonly due to altered secretion of the bile ducts, the altered mucus causing inspissation of the bile. Infection of bile he thought takes place in two ways, through the bile ducts and through the portal circulation. In the matter of treatment he considers that no drugs stimulate the flow of bile to the same extent as the bile salts. The flow is increased by exercise and deep breathing. Diet should be carefully considered, should be simple, and, as far as possible, should contain a large amount of fat. Such patients should drink plenty of pure or mineral water. The patient should also have due regard to a proper method of dress, no corsets or constricting clothing should be worn.

Surgical Diagnosis was introduced by DR. JAMES BELL, of Montreal. He said it was common to find early vague signs of gastro-intestinal indigestion, which were often found to be present for a long time before an acute attack was precipitated. He spoke of the colon and typhoid bacilli as common causes of infective conditions.

The subject of *Surgical Treatment* was introduced by DR. J. F. W. ROSS, of Toronto. In commencing his paper, Dr. Ross expressed a certain lack of faith in the so-called medical treatment of gall-stones. Speaking of some details of gall-stone operations, Dr. Ross advocated drainage through Morrison's pouch. He laid great stress on the free use of gauze packing to prevent leakage into the peritoneal cavity. In gangrene and empyema of the gall-bladder, he does not advise removal of the gall-bladder, but prefers opening, flushing and draining. In many cases of cystic enlargement of the gall-bladder, however, he advised entire removal of the viscus. It is well to remember, after removal of the gall-bladder, that gall-stones may form in the liver and may pass out into the intestines. He considers mucous fistulæ, which occasionally follow operation, as the most troublesome, and said the evil should as far as possible be prevented by the use of a small drainage tube. He also drew attention to the importance of being sure that the drainage tubes did not become blocked.

The discussion of the surgical treatment was led by Dr. G. E. Armstrong, Montreal, who recognizes and recommends the employment of medicinal treatment first in gall-stones, etc. He does not advise removal of the gall-bladder, for stone in the cystic duct. He recommends lavage of the stomach before operating on all gall-bladder cases, and as it is difficult to know what the surgeon may encounter on opening the abdomen, he advises the administration of calcium chloride before and after operation to prevent possible hæmorrhage.

Dr. Dudley Allan, of Cleveland, Ohio, next spoke *"On the Importance of Early Operation on the Gall-Bladder."* He considers, in view of the fact that an accurate diagnosis is often impossible, an exploratory incision at least should generally be made early, when, he claims, it is often found that many obscure cases are quite amenable to surgical treatment, and, in fact, would fail to recover if we were to temporize. He recited a number of cases where the diagnosis was uncertain, where he had made an exploratory incision, and had often been gratified with the results.

The subject was further discussed by Sir William Hingston, of Montreal, and Dr. Alex. H. Ferguson, of Chicago.

On Foreign Bodies in the Vermiform Appendix.

Dr. James Bell, of Montreal. In this paper the writer expresses his opinion that appendicitis never depends on the presence of foreign bodies in the lumen of the appendix. There is little doubt, however, that when foreign bodies gain entrance accidentally into the appendix, they aggravate an otherwise septic infection. Among the foreign bodies which he has found in the appendix are,—in two cases pins, in two cases seeds, in one case wood fibre, in one case gall-stones and in another case a fish bone.

Dr. Bell's paper was further discussed by Mr. Irving Cameron, of Toronto.

MEDICAL SECTION.

SECOND DAY—AFTERNOON.

Kernig's Sign—The Frequeney of Occurrence—Causation and Clinical Significance.

Dr. R. D. Rudolf, Toronto. This paper contained the results of an investigation carried out in the different hospitals of Toronto. A large number of patients of all ages were examined, suffering from divers troubles, and the angles at the hip and knee accurately measured in over 200 of them. In 162 Kernig's sign was present in 97, that is, in over 60 per cent. It was always absent in perfectly healthy children. Dr. Rudolf considers that a more convenient plan is to extend the knee and then flex the hip as far as possible. Sometimes there is more than the usual degree of stretching of the ham strings possible, and this extra flexion can, by the writer's method, be exactly measured when Kernig's sign could not show it. Out of the 97 cases in which Kernig's sign was present, in 59 an angle of less than 165° at the knee could only be obtained, and of these in 10 cases the angle was 135° or less, showing a very marked degree of the sign. These 59 cases were of all kinds, and only one of them was meningitis. Dr. Rudolf then went on to state that none of the theories of explanation of Kernig's sign were satisfactory as to its occurrence in meningitis.

Multiple Sarcoma—Report of a Case.

Drs. F. N. G. Starr and J. J. MacKenzie, of Toronto. Mr. MacKenzie read the notes on the case. No autopsy could be made. The patient was a female, 38 years of age, a seamstress. The personal or family history had no bearing on the case. For a number of years before 1901, the patient had a goitre, which, under treatment, almost disappeared in the winter of 1901. In April of this year a lump about the size of a pea was noticed slightly to the left of the middle line of the abdomen, near the symphysis pubis, hard but painless and subcutaneous. In May two or three appeared in the middle line, an inch above the umbilicus, then two or three were discovered in the back. In June two others appeared to the right of the middle line of the abdomen. In July several additional lumps were discovered in the right breast, in size from a pea to a bean. Loss of weight occurred. In August the liver was noticed to be enlarging. Commenced taking arsenic in September. In October a large tumor appeared in the left breast, and a small one was also noticed in the left thigh. Patient began to suffer from rheumatic pains. In November and December the tumors appeared in enormous numbers over the chest and back abdomen, thighs, and arms above elbows, neck and over back, sides and top of head. In January, 1902, chains of tumors, bean-sized, were noticed in the cervical region, submaxillary and suboccipital regions. By March the 8th she had thousands of tumors, most quite hard. Excisions were made and microscopic examination revealed a type of spindle-celled sarcoma, in which the prevailing cell was very long. As regards treatment, the patient took arsenic with no influence on the condition. Thyroid extract produced slight diminution in the size of the tumors. The patient died. Without autopsy one cannot say where the primary seat of the disease was, although from the great involvement of the liver, that might be the source of the disease.

On Some Points in Cerebral Localization. Illustrated by a Series of Morbid Specimens and Some Living Cases.

At an early morning session held at the Royal Victoria Hospital, DR. JAMES STEWART conducted this clinic.

On the Asylum, the Hospital for the Insane, and the Study of Psychiatry.

DR. STUART PATON, Baltimore, Md., advocated hospitals or wards in insane asylums, for proper treatment of acute cases. He also pointed out the benefits to be derived from having medical men to form a consulting staff to an asylum.

Anæsthetic Leprosy.

Two very interesting patients, father and son, were presented by DR. C. N. VALIN, Montreal, according to whom they proved to a certainty the contagiousness of this disease. From the way they had progressed under treatment, Dr. Valin considered the cases hopeful.

SURGICAL SECTION.

SECOND DAY—AFTERNOON.

Report of Three Cases of Congenital Dislocation of the Hip.

DR. A. E. GARROW, Montreal. The etiology of this condition is not well established, but heredity seems to play a part. Dr. Garrow speaks of two methods of reduction, (*a*) bloodless method, (*b*) through an incision. The chief obstacle to reduction is generally due to fibrous stricture of the lower part of the capsule. Dr. Garrow's experience has been mainly by the open method.

This paper was further discussed by DR. SHEPHERD, of Montreal.

The Operative Treatment of Goitre with a Report of Cases.

DR. INGERSOL OLMSTEED, Hamilton, Ont. As the medical treatment of goitre is very unsatisfactory, an operation is recommended in the following conditions:—1st, as soon as a goitre becomes dangerous, that is, when attacks of dyspnœa occur, or inflammatory changes occur, or there is the slightest suspicion of a malignant degeneration; 2nd, all enlarged thyroids having a tendency to grow towards the aperture of the thorax, even if they are movable; 3rd, goitres that have reached considerable development from the formation of single large colloid nodes; 4th, when with a moderate goitre symptoms like those of Basedow's disease appear, accompanied with an increased development of the goitre. The operation advised is the one usually performed by Kocher and is done under cocaine anæsthesia. It consists of a transverse symmetrically bowed incision, with its convexity downwards, from the outer surface of one sterno-mastoid muscle to the other, higher or lower, according to the position of the goitre. The skin, underlying platysma and fascia of the sterno-hyoid and sterno-thyroid muscles are reflected upwards. The fascia joining the muscles in the median line of the neck is then divided, as well as the outer fibrous capsule of the gland. The half of the gland which is most involved, is then shelled out of its capsule, the superior and inferior thyroid arteries tied and the isthmus cut with goitre clamp and ligated. The remaining attachments are then ligated and portion removed. The wound is closed with a subcuticular wire suture without drainage.

Twelve cases operated on during the past year were reported. The average stay in the hospital was seven days. The resulting scar was very slight and little or no pain was complained of during the operation.

The Pathologic Prostate and its Removal through the Perineum.

Dr. Alex. H. Ferguson, Chicago, Ill. In the opening of his paper, Dr. Ferguson said he proposed to discuss more particularly hypertrophy of the prostate. Some of the macroscopic changes in the hypertrophied prostate are: 1st, increased weight—may be up to eight or nine ounces; 2nd, greater size; 3rd, any part or the whole of the gland may be involved. Shape varies very much. Microscopically, Dr. Ferguson found all hypertrophied prostates were benign in character. He also found frequent evidences of inflammatory changes. The effects produced may be stated as: 1st, the prostatic urethra is contracted and elongated; 2nd, the vesical meatus is often rendered patulous and sometimes obliterated; 3rd, the ejaculatory ducts are also often patulous, allowing regurgitation of the semen into the bladder, and they are also often obstructed. The effects of obstruction on the kidneys and bladder are too well known to require discussion. *Treatment*: Dr. Ferguson's method of removal is by the perineal route. He uses a prostatic depressor introduced into the urethra, then elevated in such a manner as to press the prostate down in the perineum. The fingers of the left hand are passed into the rectum as a guide, and then he makes one bold incision through the perineum down to the prostatic capsule. Dr. Ferguson exhibited some special instruments devised and used by himself in this operation.

The Surgical Treatment of Enlarged Prostate.

Dr. G. E. Armstrong, Montreal, exhibited a specially constructed suprapubic vesical speculum, devised by himself, with a lateral opening which allows the prostate alone to come well in view in the speculum. The speculum can be packed around with gauze to protect the parts from possible burning, the offensive lobe or lobes are then cauterized with the thermo-cautery. Dr. Armstrong reported seven cases successfully operated upon. One point of advantage in this operation lies in the fact that the cauterized surface does not admit of septic absorption. He urges this method in the early stages of prostatic hypertrophy.

The paper by Dr. Ferguson, and also that of Dr. Armstrong, was discussed by Dr. James Bell, Montreal, Sir William Hingston, Montreal; Mr. Irving Cameron, Toronto; and Dr. Elder, Montreal.

Address in Medicine.*

At the evening session of the second day, the "Address in Medicine" was delivered by Dr. William Osler, Baltimore, Md.

The X-Ray as a Therapeutic Agent.

Dr. C. R. Dickson, of Toronto, said the explanation of the *rationale* of the X-ray is at best as yet but a hypothesis. Fortunately, we have a practical proof of its utility as a therapeutic agent in many conditions. Dr. Dickson has used it successfully in the following cases:—Nævus, lupus vulgaris, tubercular joints, scleroderma, subacute articular rheumatism (it relieved pain in many cases), neurasthenia, carcinoma of the stomach (this patient gained weight), and in carcinoma of the rectum, which case is also improving.

Dr. G. P. Girdwood, Montreal, read a paper (*X-Rays, Diagnostic and Therapeutic*), and exhibited a number of photographs.

The X-Ray in Cancer was the title of a paper by Dr. A. R. Robinson, of New York. A strong plea is that the X-ray largely does away with the knife, and leaves little scar. It is probable that all superficial cancers can be removed by the X-ray if seen early. In a delicate locality, such as the eyelid, the rays should always be used, as paste or the knife will do more harm. When malignant growths have spread deeply, the X-ray may be considered our best treatment.

---

* Published in the September number.

SURGICAL SECTION.

THIRD DAY—FORENOON.

Cases Exhibited by Dr. Bell at the Surgical Demonstration in the Royal Victoria Hospital.

1. Patient, æt. 68 years. Larynx had been removed on the 5th of March, 1900, and he is now in perfect health and showing no signs of recurrence, although at the time of operation the pathological examination of the part removed seemed to show that a portion of the disease had been left behind in the tissues of the neck.

This patient had begun to suffer from hoarseness and difficulty in breathing in the autumn of 1899, and an emergency tracheotomy had been done on the 1st of January, 1900. He was admitted to the hospital on the 25th of February with threatened asphyxia from encroachment of the disease upon the tracheal opening and much infiltration of the tissues of the neck. The operation had been done at his urgent solicitation in order to avert asphyxia and with no hope that a permanent cure could be effected. He can now make himself understood fairly well by a form of speech, although there is no communication between the air passages and the pharynx.

2. Patient, æt. 45, had been admitted to the hospital on the 11th of September, 1901, with recurrent sarcoma which had originated in the spine of the right scapula. It had been twice removed before his coming to the hospital.

On the 18th of November, 1901, the whole extremity was removed by an intra-scapulo-thoracic amputation. The patient made an excellent recovery and is still quite well.

3. A girl, æt. 18, had received a blow upon the right shoulder in August, 1901, by a heavy swinging door. The shoulder was swollen and painful for a week. On the first of February, 1902, she slipped on the ice and fell, striking the shoulder again; pain and swelling followed, the swelling subsiding in ten days, but the pain persisted. Enlargement of the shoulder was first noticed March 1st.

She was admitted on the 23rd of April, and the extremity removed by an intra-scapulo-thoracic amputation on the 8th of May. On the 18th she contracted measles, and on the 10th of June was returned to the surgical ward and discharged on the 14th with the wound quite healed, and no evidence of recurrence of the disease. The day after her return home she began to suffer from pain in her side, and on the 27th of June she died from sarcoma of the pleura.

4. A man, æt. 38, had had a mole on the top of the right shoulder over the spine of the scapule, from childhood. In February, 1902, it

began to enlarge, and in May it had reached the size of a walnut, and was removed. About the first of July he noticed enlargement of the gland in the axilla, and was admitted on the 28th of July, when spots of melanotic epithelioma were found in the cicatrix and surrounding skin for a considerable area, with very great enlargement of the axillary glands and great swelling about the shoulder joint.

He suffered extremely, and amputation was undertaken for the relief of pain rather than with any hope of affecting a cure. Intra-scapulothoracic amputation was done on the 18th of August, a very large area of skin removed, and the patient is now quite well with the exception of a granulating area which had been left uncovered by skin. He is now being treated by X-ray method as a prophylactic against recurrence.

The organs were shewn of:—

1. A man, æt. 55, who had died of chronic glanders. He was a farmer, and had had glanders among his horses for three years, and finally had them shot. The disease dated back to November, 1900, and he died on the 1st of September, 1902. The lesions had been intermittent and acute, and generally in the lymphatic glands or subcutaneous, with the exception of a lesion of the cranium in the occipital lesion, and from each of the acute lesions the bacillus was easily found, and inoculation of guinea pigs produced the usual results.
2. The kidneys of a man, æt. 65, in whom simultaneous obstruction of both ureters had occurred, causing complete suppression of urine for nine days, with a copious flow on the tenth day, when the patient was in articulo mortis.
3. A series of kidney stones and gall stones was also shewn.

The first paper was

Remarks on the Sympathetic Ophthalmia.

by Dr. G. Herbert Burnham, Toronto, followed by a paper on the

Ocular Manifestations of Systemic Gonorrhœa.

by Dr. W. Gordon M. Byers, Montreal.

Excision of the Cæcum.

Dr. O. M. Jones, Victoria, B.C., cited four cases operated on. The first died about two years after. A post-mortem proved that the cancerous growth had not recurred at the point of the original operation. Symptoms in all cases were: griping pains in the abdomen, loss of weight and irregular action of the bowels, together with the presence of a mass in the region of the cæcum.

On Three Cases of Perforating Typhoid Ulcer, Successfully Operated On.

Dr. J. F. Shepherd, Montreal, reported these cases. First, as to technique: Dr. Shepherd has always made use of the lateral incision, and has usually found the perforation near the ileo-cæcal valve. By this incision the site of the perforation is more easily found than by the median. He has always closed the incision by turning in the bowel and making use of a continuous Lembert suture, employing fine silk. Other ulcerations in the neighbourhood are treated in the same way. Rubber drainage is employed. There is always suppuration in these cases and usually a hernia as a result. General anæsthesia is always used in these cases. Early and rapid operation, seeing that there are no others likely to perforate, are important points. The first case was a woman of 30, with ambulatory form; the second was a woman of 28, admitted on the 8th day. It is of interest in this case that although perforation had taken place, there was no leucocytosis. The third was a male, æt. 30, in the third week, seized with severe pain and one hour after there was obliteration of liver dulness and marked leucocytosis. All are quite well with the exception of herniæ.

A Case of Total Extirpation of the Urinary Bladder for Cancer.

Dr. Lapthorn Smith, Montreal, presented this paper. After reviewing the great advances which had been made in the surgery of the bladder in recent years, especially in the management of fistulæ and injuries to the ureters, the author took up the subject of removal of the bladder. He gave a brief historical outline of one hundred published cases, from which it appeared that when the operation of removal of the bladder was done for malignant disease the death rate was over 50 per cent, while in cases of exstrophy and other non-malignant conditions, the death rate was only 19 per cent. He was strongly of the opinion that with greater experience in technique the mortality of the non-malignant cases would fall much below nineteen, while in the malignant ones, when the disease was recognized and removed much earlier, the high death rate of over fifty per cent. would be reduced to less than twenty-five, just as it had been in hysterectomy for cancer, which was 75 per cent. twenty-five years ago, but was now less than five. He therefore urged all practitioners to look out for this disease, the cystitis and hæmorrhages being among the early symptoms, and not to lose precious time in unavailing local and medicinal treatment. His own case was misleading, because she had a fibroid tumor the size of an orange pressing on the bladder, for which the patient was taken into hospital and the tumor was easily removed by myomectomy. Her bladder symptoms not being relieved, a button-hole was made and the bladder explored by the finger, when the cancer was found occupying the trigone. Two week later abdomen was opened, peritoneum pushed back, ureters cut off and attached to vagina and bladder removed, together with enlarged pelvic glands. Patient rallied well and was making good recovery until sixth day, when she rapidly collapsed and died. She was sixty-five years of age and in poor condition, and the disease was too far advanced.

GENERAL.

THIRD DAY—MORNING SESSION.

Election of Officers.—Dr. T. G. Roddick, M.P., Chairman of Nominating Committee, presented the report of this committee. London, Ont., was selected as the next place of meeting.

President—Dr. W. H. Moorhouse, London, Ont.

Vice-Presidents—Prince Edward Island—James Warburton.

Nova Scotia—John Stewart, Halifax.

New Brunswick—W. C. Crockett, Fredericton.

Quebec—Dr. Mercier, Montreal.

Ontario—W. P. Caven, Toronto.

Manitoba—Dr. McConnell, Morden.

North-West Territories—J. D. Lafferty, Calgary.

British Columbia—C. J. Fagan, Victoria.

Local Secretaries—Prince Edward Island—C. A. MacPhail, Summerside.

Nova Scotia—Dr. Morse, Digby.

New Brunswick—J. R. McIntosh, St. John.

Quebec—R. Tait McKenzie, Montreal.

Ontario—Hadley D. Williams, London.

Manitoba—J. T. Lamont, Trehern.

North-West Territories—D. Low, Regina.

British Columbia—L. H. McKechnie.

General Secretary—George Elliott, 129 John Street, Toronto, Ont.

Treasurer—H. B. Small, Ottawa, Ont.

Executive Council—Drs. Moore, Eccles and Wishart, London, Ont.

Dominion Health Bureau.

Dr. E. P. Lachapelle, Secretary of the Board of Health of the Province of Quebec, moved the following resolution, seconded by Dr. J. M. Jones, Winnipeg, which was carried unanimously:—

"*Whereas* public health, with all that is comprised in the term, Sanitary Science, has acquired great prominence in all civilized countries; and

"*Whereas* enormously practical results have been secured to the community at large by the creation of health departments under governmental supervision and control; and

"*Whereas* greater authority and usefulness are given to health regulations and suggestions when they emanate from an acknowledged Government Department;

"*Therefore, be it resolved,* that in the opinion of the Canadian Medical Association, now in session, the time is opportune for the Dominion Government to earnestly consider the expediency of creating a separate department of public health, under one of the existing ministers, so that regulations, suggestions and correspondence on such health matters as fall within the jurisdiction of the Federal Government, may be issued with the authority of a department of public health.

"*That* copies of this resolution be sent by the General Secretary to the Governor-General-in-Council and to the Honorable the Minister of Agriculture."

Treasurer's Report.

Dr. H. B. Small presented his report. 317 members had been in attendance, nearly 100 larger than any other previous meeting. All outstanding indebtedness had been paid, and there was in the treasury $325 to the good of the Association.

Votes of thanks were passed to Mr. and Mrs. James Ross, of Montreal, in whose handsome grounds had been tendered a garden party on the afternoon of the first day; to the Local Committee and Transportation Committee, special reference being made to Drs. C. F. Martin and J. Alex. Hutchison, for their indefatigable efforts for the success of the meeting; to the Treasurer, to the President, and the profession generally for their hospitality.

Thus was closed the greatest meeting of the 35 years of the Association, and it is to be hoped that the profession throughout Canada will still further take an active interest in this national organization.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,
F. J. SHEPHERD,

WITH THE COLLABORATION OF

C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. OCTOBER, 1902. NO. 10.

THE PROVINCIAL MEDICAL BOARD AND PRELIMINARY EDUCATION TO THE STUDY OF MEDICINE.

At the last semi-annual meeting of the College of Physicians and Surgeons of the Province of Quebec, held in the city of Quebec on September 24, 1902, a resolution was adopted, after a somewhat prolonged and heated discussion, to the effect that every candidate presenting himself for the entrance examination of the Board—the "brevet," as it is called among the French—should furnish credentials of having taken a "cours classique complet," which, translated literally, means a complete classical course. Failing this, the candidate should not be allowed to present himself for examination. The ostensible purpose of the foregoing resolution was the elimination of a number of uneducated candidates, who, either unwilling to devote the time and expense involved in taking a "cours classique complet," or intellectually unfit for the same, had, with the assistance of a professional "coach," crammed during a period of a few months in order to pass the examination for entrance prescribed by the Board. In this category would also be included "pluckees" (*ratés*) of the "collèges classiques," who should attempt by the same short cut to join their more successful companions on the threshold of their professional studies.

In the abstract the new regulation appears admirable and calculated to raise the level of preliminary education in certain quarters where it is most needed. The practical application of it, however, to intending candidates as a body is by no means so simple as imagined by its promoters, if the interests of all parties concerned are fairly taken into consideration—the examiners, the candidates, the Board, and the members of the medical profession generally. It does not seem to have dawned on the Board that the new regulation casts a reflexion on the examiners in the preliminary examination. Either the examiners are competent to judge of the educational qualifications of the candidates, as shown by their answers, or they are not. If they are—why not let well alone? If they are not—why not change the examiners? No one with a moderate acquaintance with examinations or examiners will doubt that a practised and competent examiner can tell the trained scholar from the stuffed goose variety.

But the *crux* of the question concerns the candidate chiefly. What constitutes a "cours classique complet"? It is obvious that the framers of the resolution had in mind such a course as is given in the several French and English Catholic "colleges" distributed in various parts of the Province of Quebec. That the courses of study in these colleges are thorough, the quality of teaching of a high order, and that they subserve the needs of their pupils, no one will deny. But what of the French and English Protestant "colleges," academies, and high schools (the universities are not in question) where an equally thorough training is afforded, though modelled on very different lines of study? What is the equivalent, or is there any, in Protestant educational institutions, of the "cours classique complet"? That is the question that the members of the Board who voted for the new regulation did not take into account in legislating for the majority. We do not say that they did so knowingly, but nevertheless the result is the same—a discrimination against a minority that is unable to comply with an inelastic requirement. That this is not an imaginary but a real grievance is evident when one compares the courses of study in Catholic and Protestant educational institutions of the same grade. To take but one instance out of many—philosophy, which forms an integral and important part of the curriculum in the former, is not taught in the latter, its place being taken by other subjects, which in the opinion of Protestant educationists are of equal importance.

The fact is that the two systems of education are utterly dissimilar and irreconcilable, and this is evidenced by the existence of separate educational boards for even primary education. That the dissimilarity should extend to, and be intensified in the sphere of secondary or higher education is a foregone conclusion, and any attempt to favour one system necessarily involves an injustice to the other. It is true that the supporters of this measure disclaim any intention of putting difficulties in the way of candidates trained in Protestant educational institutions—that they say they have a high opinion of the education given in these institutions—but the fact remains that the regulation calls for a course of study that is not paralleled in Protestant "colleges," academies or schools.

Practically, if interpreted in the literal sense, it means the rejection of all candidates who cannot show evidence of having followed the schedule of studies required by candidates entering the notarial profession, which is the model upon which the new regulation of the College of Physicians and Surgeons is based. The only alternative for the candidate would be to study four years at one of the universities and obtain the B.A. degree, which would admit him to the study of medicine without further examination. Such an alternative is most unfair to the minority, for while no one will deny that the additional training implied in the acquirement of a B.A. degree is in itself a desirable thing, such a requirement under present educational conditions in the Province of Quebec ought not to be forced upon anyone who is prepared to pass the prescribed examination.

It remains to be seen what course will be taken by the legislature, to which this amendment to the charter of the College must be submitted before it becomes law. The most satisfactory solution of the difficulty would be to obtain legislation establishing the same dichotomy in professional as exists in general education in the province.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

It is now close upon fifty years ago that Prof. Henry, of Washington, D.C., at a meeting of the British Association for the Advancement of Science, at Glasgow, urged the necessity for a proper cataloguing of scientific literature, that should be, not merely national, but universal. The seed thus sown, took growth, and the projected scheme was eventually taken up by the Royal Society of London, which, in 1867, published its first volume of the Catalogue of Scientific Papers. Of this Royal Society Catalogue, twelve large quarto volumes have been printed, covering the papers which have appeared dealing with certain of the sciences between 1800 and 1883. A catalogue dealing with the period 1884 to 1900, is now under way. But these Royal Society Catalogues make no pretension to completeness. It was soon evident that the work was beyond the resources of the Society or indeed of any single body. The catalogue also was purely an author catalogue, giving the names of the different workers, with the titles of their contributions, add to which it appeared at relatively long intervals, and so was only of partial value. For what is of special importance to workers in various branches of science is that they should be kept fully and quickly informed of all new discoveries by means of complete subject indexes.

In 1895, if we mistake not, Sir Michael Foster, one of the secretaries of the Royal Society, took the matter up, and at an international scientific gathering held at Rome, and elsewhere, urged powerfully the necessity for international co-operation in the work. The result of the labours of himself and his co-workers was that in 1896, an international conference took place in London, which was attended by official delegates from twenty-one different States, Canada and other British possessions being represented, and even countries like Norway, Japan and Mexico showing their interest in the work. The result of their conference was that a combined scheme was determined upon.

Organization, of necessity, has taken many years. Methods of classification had to be determined upon, methods of collecting titles, the scope of the proposed catalogue, the organization of national committees or bureaus, as also the financial arrangements. Eventually the schedules for seventeen branches of science to be included in the catalogue were drawn up and adopted, and it was finally resolved to recommend that the Royal Society be requested to organize the Central Bureau, so that the preparation of the catalogue might be commenced with the first year of the new century. With great public spirit, the Royal Society undertook to act as publishers of the catalogue on behalf of the International Council, and to advance the capital required to start the enterprise, on the understanding that this should be repaid during the ensuing five years.

The branches to be included in the catalogue are as follows:—

A—Mathematics. B—Mechanics. C—Physics. D—Chemistry. E—Astronomy. F—Meteorology (including Terrestial Magnetism). G—Mineralogy (including Petrology and Crystallography). H—Geology. I—Geography (Mathematical and Physical). K—Palæontology. L—General Biology. M—Botany. N—Zoology. O—Human Anatomy. P—Physical Anthropology. Q—Physiology (including Experimental Psychology, Pharmacology and Experimental Pathology). R—Bacteriology.

How extensive is the undertaking must be gathered from the fact that the first two volumes, being the first parts of the catalogues in chemistry and botany respectively, for the year 1901, consisting of lists both of authors and subjects and with indexes of organic substances and species respectively, form volumes each of close upon 500 pages of the ordinary quarto size, the titles being given in the language of publication, and where these languages are out of the common, Polish, Swedish, Dutch, etc., the title is translated into English, French or German.

The enormous value of such a compilation to all serious workers is readily understood. Our own feeling of loss, now that the Index Medicus has ceased to appear, is an illustration of the value of such a work.

It is true that medicine proper is not included. Notwithstanding the more scientific branches receive full attention, Human Anatomy and Bacteriology being afforded separate volumes, and Experimental Psychology and Pathology being indexed along with normal Physiology. The parts upon Botany, Zoology, and General Biology are, however, all of importance to the medical worker.

As already noted, Canada participates in the scheme, and our Government has subscribed for seven complete copies of the annual issue of seventeen volumes. Beyond this, unfortunately, the Government has not seen its way to proceed, and the Regional Bureau, formed of those undertaking to index Canadian titles, has to find its fund as well as it may. So far such funds are *nil*, and the indexing is a voluntary affair on the part of a few active workers in the different branches of science, who can scarce be expected to subscribe for and obtain possession of all the Canadian literature upon their particular subjects.

Here it might be noted that it will materially aid in the due notification of Canadian work if those writing papers on Human Anatomy send copies or reprints of the same to Prof. Primrose, Biological Building, University of Toronto; if physiological papers be similarly sent to Prof. A. B. MacCallum, at the same address, and if papers containing original notes in Pharmacology, Experimental Pathology and Bacteriology, be forwarded to Prof. Adami, McGill Medical College. Prof. Penhallow (McGill) has similarly undertaken to catalogue Botanical works, and Prof. McBride (McGill), Zoological.

Thus enough has been said to show that these catalogues are absolutely essential to the full equipment of every scientific library.

These first two volumes are well printed on good paper and in clear, readable type. So far as we have been able to study them, they leave little to be desired. It is true that at first it is a little difficult to find one's way about in them—but a little study of the scheme of classification makes matters clear. Time will show whether so large an undertaking, requiring, as it does, the hearty co-operation of workers in many lands, can be successfully carried on for years to come. These two volumes have, however, a most promising appearance. They show that international cataloguing is possible, and if possible, then it should be persevered with.

THE EDITORIAL STAFF OF THE "JOURNAL."

The vacancy in our Editorial Board occurring through the retirement of Dr. T. G. Roddick, M.P., on his accepting the position of Dean of the Medical Faculty of McGill University, has been filled by the appointment of Dr. Francis J. Shepherd, Professor of Anatomy of the Faculty of Medicine of McGill University.

APPOINTMENTS AT McGILL UNIVERSITY MEDICAL FACULTY.

Dr. E. M. von Eberts, late Medical Superintendent of the Montreal General Hospital, has been appointed Registrar of the Faculty, Dr. Ruttan becoming Professor of Chemistry.

Dr. H. Wolferstan Thomas, who graduated in 1897, has been appointed Fellow in Pathology. Dr. Thomas has spent the past three years in Germany in the study of Pathology and Comparative Pathology.

THE MEDICAL COUNCIL OF THE YUKON TERRITORY.

The election of members for the Medical Council of the Yukon Territory took place in July last. After a keen and close contest the following were elected officers:—

President—Mr. McLeod.
Vice-President—Dr. Barrett.
Registrar and Secretary—Dr. Edwards.
Executive—Drs. Barrett, Sutherland and Alfred Thompson, with the President and Registrar (*ex-officio*).

McGILL MEDICAL LIBRARY REPORT.

QUARTERLY REPORT, MAY 1ST TO JULY 31ST, 1902.

Albany Medical Annals, Editors, 1901.
American Climatological Association, Trans. Vol. 17, 1901.
American Medico-Psychological Assoc. Proc., 1901.
Association of Medical Librarians, 5 vols.
Association of Physicians of Long Island, Trans. Vol. 3, 1902.
Australasian Medical Gazette, Editors, 1901.
Birmingham City Health Report, 1901.

Blackader, A. D., M.D.
  Progressive Medicine, 5 vols.
  Therapeutic Gazette, 1894.
Bowhill, Thos., M.D., F.R.C.
  Manual of Bacteriological Technique & Special Bacteriology, 1902.
Cameron, J. C., M.D.
  Centralblatt f. Gynakologie, 5 vols.
  Bulletin de la Soc. d'Obstetrique de Paris, 3 vols.
  Medical News.
Canadian Dental Association.
  Dental Journal, 1901.
Chicago Pathological Society Trans., Vol. 4, 1899-1901.
College of Physicians of Philadelphia, Vol. 23, 1901.
Connecticut State Board of Health, Ann. Report No. 24, 1902.
Councilman, W. T., M.D.
  Study of Bacteriology and Pathology of 220 fatal cases of Diphtheria, 1901.
Finley, F. G., M.D.
  Clinical Text-Book of Medical Diagnosis, Vierordt.
Florida State Board of Health Report, 1901.
Glasgow Corporation.
  Board of Health Report, 1901.
  Report of the Plague.
  Sanitary Report.
Great Britain Army Med. Dept. Report, 1900, 1902.
Great Britain War Office, Med. Organization of Foreign Armies, 1902.
Hahn, Dr.
  Paris Theses, 11 vols.
Horrocks, Dr.
  Introduction to Bacteriological Examination of Water, 1901.
Indian Government.
  Annual Report of Sanitary Commissioner, 1900.
Iowa State Board of Health, 10th Biennial Report, 1899.
Italy, Government of.
  Bulletin Sanitaire del Regno. Roma.
Johns Hopkins Hospital Bulletin, 1901.
Journal of American Medical Association, 1901, Publishers.
Louisiana Board of Health Report, 1900-01.
McGill Medical Society.
  Therapeutic Gazette, 1901.
Manchester City Health Report, 1901.
Massachusetts General Hospital, Annual Report, 1901.
Medical Times, 2 vols., Editors.
Michigan, Report of Secretary of State, 1899.
Monthly Cyclopædia of Practical Medicine, 1901, Editors.
Montreal Medical Journal, Editors, Vol. 1901.
  Journ. of Boston Soc. of Medical Sciences, 1899-1900.
  Journ. of Cutaneous and Genito-Urinary Diseases, 1900.
Mount Hope Retreat, 79th Annual Report, 1902.
McKenzie, R. Tait, M.D.
  De Medicalis aquis atque de Fossilibus. G. Fallopius, 1564.

Monod, Dr.
  Traité Chir. de méd. Bot. Pied Varus Equin. Congenitale chez l'Enfant,'01.
Medical Society, County of Kings, Library.
  Brooklyn Medical Journal, 5 vols.
National Academy of Medical Sciences, Vol. 8, 1902.
New York State Board of Health, 2 vols., 1900, 1901.
New York State College Dept. 4th Annual Report, 1901.
New York State Library Annual Report, 1901.
Ohio State Board of Health, Annual Reports, 1899, 1900, 1902.
Ontario Prov. Report on Births, Marriages and Deaths, 1900, 1902.
Osler, Wm., M.D.
  Collection of Reprints, 1897-1902.
  De Emendata Structura, 1550.
Pathological Soc. of London,Trans., Vols. 38-50, 1887-1899.
Pharmaceutical Journal, 2 vols., Editors.
Pennsylvania Dept. of Agriculture, 2 vols., 1901.
Pennsylvania Society for the Prevention of Tuberculosis, Report 1901-02.
Presbyterian Hospital, Med. and Surg. Report, 1902.
Royal Academy of Medicine, Ireland, Vol. 19, 1901.
Royal College of Physicians of England.
  Indian Plague Commission.
  Use of Phosphorous in the Manufacture of Lucifer Matches.
Royal College of Physicians, London, 9 Theses.
Royal Medical & Chirurgical Soc. of London, Vol. 84, 1901.
Ruttan, R. F., M.D.
  Registration of Births, Marriages and Deaths of Rhode Island.
  Canadian Almanac & Miscellaneous Directory, 2 vols.
San Francisco Board of Health, Biennial Report, 1901.
Sawyer, Dr.
  Contributions to Practical Medicine, 1902.
Scotland Local Government Board, 7th Annual Report, 1901.
Shepherd, F. J., M.D.
  British Journal of Dermatology.
  Canadian Practitioner & Review, 1901.
Shirres, D. A., M.D.
  Studies from the Dept. of Pathology, Royal Victoria Hospital.
South Carolina Health Board, 22nd Report, 1901.
Stewart, James, M.D.
  On an Epidemic of Skin Diseases, Savill.
  Technik der Histologischen untersuchung, Kahlden.
  Grundriss einer klin. Path. des Blutes, Limbech.
  Lehrbuch der speciellen Path. u. Therapie, Strumpell.
  Untersuchungen uber die Respir. u. Circul., Loewy.
  Leçons sur les maladies du système nerveux, Raymond.
  Naphey's Modern Therapeutics.
  Montreal Medical Journal, 1896.
  Internat. System of Electro-Therapeutics, Bigelow.
  Lectures on Auto-Intoxication in Disease, Bouchard.

Year-Book of Treatment, 3 vols.
Treatment of Pulmonary Consumption, Harris & Beale.
Principles and Practice of Medicine, Osler, 3 vols.
Manual of the Practice of Medicine, Lockwood.
Manual of Percussion and Auscultation, Flint.
Practical Diagnosis, Hare.
Pharmacology and Therapeutics, Brunton.
Materialism and Modern Philosophy of the Nerves, Thompson.
Chemistry, Attfield.
Manual of Practical, Medical and Physiological Chemistry, Pellew.
Practical Urinalysis, Purdy.
Manual of Chemistry, Simon.
Manual of Medical Jurisprudence, Hamilton.
Forensic Medicine and Toxicology, Woodman.
Origin of Species, Darwin.
Principles of Biology, Spencer.
Essays, Scientific, Political and Speculative, 4 vols.
Principles of Surgery, Senn.
Spinal Concussion, Clevenger.
Manual of Diseases of the Nervous System, Gowers.
Investigations into some marked Cardiac Conditions, Russell.
The Antagonism of Therapeutic Agents, Fothergill.
Practical Electricity in Medicine and Surgery.
Treatise on Electrolysis, Amory.
Treatise on Albuminuria, Dickinson.
Inebriety, Kerr.
Gynæcological Electrical Therapeutics, Bigelow.
Essay on Medical Pneumotology, Demarquay.
Experimental Methods in Medical Science, Dalton.
Essentials in Physiological Diagnosis of the Thorax, Corwin.
Medical Microscopy, Wethered.
Manual of Dietetics, Fothergill.
Swedish Movements and Massage Treatment, Nissen.
Chemistry and Therapeutics of Uric Acid and Gout, Roberts.
Principles or guides for a better selec. or class of Consumptives, Tussey.
American Text-Book of Physiology.
Healing of Nations, Williamson.
Manual of Hypodermatic Medication, Bartholow.
Diseases of Modern Life, Richardson.
Physiological Medicine and Allied Nervous Diseases, Mann.
St. Lawrence State Hospital Report, 1894.
Functional Nervous Diseases, Putzel.
Atlas des Gesunden. u. Kranken. Nervens Systems, Jacob & Strumpell.
Chronic Bronchitis and its Treatment, Murrell.
Asthma considered esp. in relation to Nasal Disease, Schmiegelow.
Text-Book of Nervous Diseases, Dana.
Text-Book of the Practice of Medicine, Anders.
Text-Book of the Practice of Medicine, Page.
Manual of the Practice of Medicine, Stevens.
Lessons in Physical Diagnosis, Loomis.
Klinische Diagnostik, Jaksch.

Hand-Book of Therapeutics, Ringer.
Elements of Pharmacology, Schmiedeberg.
Grundriss der Klin. Diag., Klemperer.
Prize Essays on Leprosy, Newman.
Gout and its Relation to Disease of the Liver, Roose.
Diseases of the Lungs and Pleuræ, Powell.
Diseases of the Liver, Harley.
The Liver of Dyspeptics, Boix.
Journal of Physiology and Bacteriology, 2 vols.
Practical Treatise on Medical Diagnosis, Musser.
Manual of Materia Medica and Pharmacology, Culbreth.
Traité Pratique de Matière Médicale et de Thérapeutique, Desrosiers.
Text-Book of General Therapeutics.
Journal of Nervous and Mental Diseases, 3 vols.
Revue Neurologique, 3 vols.
Neurologisches Centralblatt.

Strassburg University, 44 Theses, 1900-01.

St. Thomas Hospital Reports, Vol. 29, 1902.

Thompson-Yates Laboratory, Reports for 1901 and 1902.

United States Department of Agriculture, Library.

Massachusetts Health Reports, 6 vols.
Ohio, 10 vols.
Michigan, 13 vols.
Missouri, 5 vols.
Pennsylvania, 5 vols.
New Jersey, 4 vols.
New Hampshire, 3 vols.
Nebraska, 2 vols.
New York, 9 vols.
Virginia, 1 vol.
Queensland Health Report, 1891.
Royal Soc. of Edinburgh, Proceedings, 1893.

West London Medical Society.

West London Medical Journal, 1901.

Reprints, Pamphlets, Calendars, etc.

Anderson, W. S., M.D. 1.
Bristol, Report of Medical Officer, 1902. 1.
Detroit College of Medicine. 1.
Earp, Sam'l, M.D. 1.
Grimmer, S. K. M.D. 1.
Indian Government. 1.
Jefferson Medical College. 1.
Judson, A. B., M.D. 1.
Mann, M. D., A.M., M.D. 2.
Melbourne University. 1.
Michigan University. 1.
Minnesota University. 1.
Montreal Medical Journal, Editors. 7.
Musser, J. H., M.D. 12.

Owens College, Manchester. 3.
Pensylvania Department Agriculture. 4.
Philadelphia Polyclinic. 1.
Powell, N. A., M.D. 1.
Scottish Assoc. for Med. Education of Women. 1.
Shepherd, F. J., M.D. 9.
Sutcliffe, J. A., A.M., M.D. 1.
United States Marine Service. 1.
University of London. 2.
Veer, Vander, M.D. 3.
Woman's Medical College, Baltimore. 1.
Wood, C. A., M.D. 1.

New Books Added.

Archives fur Exper. Pathologie u. Therapie, 1901.
Brain, General Indexes to Vols. 1-
Deutsche Zeitschr. fur Chirurgie, 1902.
Deutsche Medicinische Wochenschrift, 1901.
Deutsche Archiv. fur Klinische Medicinische, 1901.
Hoppe Seyler's Zeitschrift fur Physiologisches Chemie, 1896.
Hygienische Rundschau, 1896.
Jahres. u. d. Fortschritte inder Lehre., 1900 and 1901.
Revue de Chirurgie, 1900.
Zeitschrift fur klin. Med., 1901.
Zeitschrift fur klin. Med., 1901.
Zeitschrift fur Hygiene u. Infectionskrankheiten, 1896.

THE
MONTREAL MEDICAL JOURNAL.

VOL. XXXI. NOVEMBER, 1902. No. 11.

Original Communications.

CLINICAL NOTES ON BLOOD PRESSURE IN DISEASED CONDITIONS.*

BY

A. E. ORR, M.D.
Demonstrator of Anatomy, McGill University.

This paper is not intended as an exhaustive treatise on blood pressure, but as a contribution to the study of the subject from a clinical standpoint. The arterial pressure has been measured with Gærtner's tonometer in 400 patients. This work has been done in the Royal Victoria Hospital, Montreal, chiefly for the purpose of submitting the instrument to a practical clinical test. I have pleasure in taking this opportunity to express my thanks and indebtedness to Dr. James Stewart for permission to make these observations, and to Drs. W. F. Hamilton and C. F. Martin for their kind co-operation, also to the resident staff for courteous assistance.

Typhoid Fever, 70 cases:—These were recorded in different stages, showing an average blood pressure of 104.5 mm. for the whole number (110 to 120 is taken as the average normal for this instrument). It was highest, but still subnormal, in the first week, being 107.4 for seven cases—only a small proportion reaching hospital in the first week. In second week, 102.6 for 23 cases. In third week, 104.7 for 13 observations; and after third week, including protracted cases and convalescents, 104.2 in 47 observations. As cases came in at different stages, somewhat changed values might be found in a selected series in which observations could be made in each week in each case.

There was only one death. This was a man of 35 years whose pressure was 105 on the 10th day, 110 on the 21st day; then came three hæmorrhages and a fatal termination on the 24th day.

---

* Read before the Canadian Medical Association at Montreal, Sept. 16, 1902.

Of seven cases noted as severe, the lowest reading was 80 with prostration, delirium, cardiac enlargement and relative insufficiency; one case of 80 after three severe hæmorrhages; others of 98, 99, 95. One with old disease of the aortic and mitral valves showed 110 on the 43rd day during relapse, and 115 during convalescence. Readings of 90, 85, 96 were found in cases of mild or moderate course.

One case of acute parenchymatous nephritis and an average urea excretion of 240 grains per diem during seven days, was slightly subnormal (105) on the 12th day, and quite low (85) on the 29th day, when convalescent. The highest reading was 140 in the first week in a case with chronic interstitial nephritis and an average urea excretion of 73 grains per diem. during seven days.

A large proportion of these typhoids had cold baths or cold spongings. In only one or two instances were observations made within two hours after application of cold. In one case, 20 minutes after general cold sponging, pressure was 85. The fingers were slightly bluish and possibly there was a certain degree of local asphyxia. Gærtner states that observations under such conditions are not reliable.

Chronic Nephritis, 19 cases:—In this group the highest readings were found, *viz.*, one of 260, two of 255, one of 240, one of 225 and so on, or an average of 208.5 for the thirteen high pressures. Six were at or below normal, giving an average of 178.9 for the 19 patients. One case of chronic parenchymatous nephritis with persistent and uncontrollable vomiting and normal tension proved fatal; one slightly subnormal (106) with œdema and ascites died; and one of 100 with extreme general œdema, ascites and hydrothorax, was of course a bad prognosis. Two cases of normal tension showed no bad symptoms, and in these no doubt the prognosis is very good, much better than in those with no bad symptoms apart from high pressure.

Probably in chronic nephritis a considerable fall in blood pressure, which has long been high, with increase or appearance of œdema and increase of other symptoms, indicates a very serious condition.

One case was brought in almost in a state of collapse, but improved rapidly with hypodermics of strychnine, and with the improvement the blood pressure rose and remained very high (190 to 200). Another case presenting the picture of failing heart power with enormous œdema of lower extremities, hydroperitoneum and hydrothorax, had a pressure of 162 when I first saw her, the day after large doses of digitalis had been commenced; and on the third day of digitalis reached 205—an increase of 43 mm.—and a considerable degree of improvement took place. In one of the subnormal cases there was no rise after digitalis and no improvement.

In cases of what might be termed chronic high pressure there have been several instances where a lowering of blood pressure has been coincident with an increase of severity of symptoms, and complaints of headache, malaise, etc. There has been no such case benefitted by lowering of blood pressure, but several have improved during an increase. Probably in such chronic high tensions the various functions cannot be carried on at a level, normal for healthy individuals; and when we give vasomotor depressants we do harm in proportion to the lowering achieved. The symptoms are not due to the high tension, but to the cause of the high tension. Several cases clinically diagnosed as chronic parenchymatous nephritis gave high readings; one of 197 was verified at post mortem.

Acute Nephritis, 7 cases:—Only three of these showed high pressure. One with considerable œdema and pallor, which was still at the normal pressure after six months duration, rose to 180 in the eighth month, possibly showing a change in type of the disease and advancing lesions in kidneys and general capillary walls.

One interesting case came in with œdema and convulsions complicated with middle ear disease. The high pressure found (195) was to me a strong factor in the diagnosis of uræmia, as against meningitis or cerebral abscess. The œdema and albumin disappeared, and the patient was discharged after six weeks with normal blood pressure.

There were no serious symptoms at the time of measurement in any of those with normal pressure, although in one of them there had been apparently a uræmic condition and a tension digitally estimated to be very high, two weeks before I saw her.

Arterio-Sclerosis, 27 cases:—Highest, 210; 16 being 150 and over; 4 from 130 to 145; 3 from 110 to 125; and 4 subnormal. The highest was in a man of 72, with glaucoma, no albumin. Three other cases of glaucoma in elderly females without albuminuria gave high readings, 200, 200, 170. I am indebted to Dr. Buller for permission to observe these glaucoma cases.

Only one of the arterio-sclerotics is noted as having albuminuria, but at post mortem only slight changes were found in the kidneys, which were attributed to stasis from cardiac insufficiency. This patient, a negro aged 45, was in the wards several months with increasing œdema, orthopnœa and cyanosis, presenting the whole picture of failing heart power, whilst his blood pressure increased from 160 in May to 200 in June, and was 200 a few days before death. The radial was but slightly thickened; systolic murmur at apex; second aortic sound very loud, prolonged, and low pitched. Nitroglycerine, 1/100 grain three times daily, did not lower his blood pressure. Post mortem: heart enormous, 800 grammes; ventricles hypertrophied and dilated; no valvular disease; advanced atheroma, chiefly of aorta with constriction of aorta to 5 cc. at beginning of descending portion, right coronary artery obliterated at its origin; heart muscle showed no macroscopic evidence of degeneration.

Of the subnormal arterio-sclerotics, one, J. E., male, had radials thickened and tortuous; left ventricle slightly enlarged; blood pressure 90, distinctly subnormal; no œdema. One with radials extremely hard, thickened and tortuous, showed 90 mm., but was almost *in extremis* from cancer of bowel at time of observation. One male, aged 81, gave reading of 85 with extreme degree of arterio-sclerosis; pulse irregular, failing heart. One man of 65, with radials of extreme hardness like rigid tubes and practically normal pressure (130), had been at work as a gardener up to a day or two before admission.

In one of these non-albuminuric cases whom I saw in private practice, I noted the presence of high arterial tension in 1893. This summer, in her 73rd year, I found the pressure by the tonometer 180. It appears, then, supposing my digital estimate to have been correct, that moderately high tension in an elderly person without albuminuria is not necessarily of very bad prognosis. Cheyne-Stokes breathing was also noted in this patient nine years ago during an attack of epidemic influenza, and at intervals since then it has recurred whenever she has been ill.

Valvular Disease of the Heart, 48 cases:—Including mitral regurgitation, 11 cases, of which all had normal pressure but three, and only one was below 100 (90). In many of them compensation was most seriously impaired.

Mitral stenosis, 8 cases:—6 normal, some of them with compensation bad. One of 100 mm. able to walk about the ward, but with heart greatly enlarged, œdema, dyspnœa, cyanosis, and a history of two attacks of hemiplegia. One, a male aged 32, convalescent from acute articular rheumatism, had been able to work up to present attack. One with normal pressure had been unable for any considerable degree of exertion during preceding six months.

Mitral stenosis with mitral regurgitation, 14 cases:—Eleven had practically normal tension, some of them with most serious symptoms of failing compensation. One, a female aged 45, had pressure of 190 and chronic nephritis. Although diagnosed and classed as valvular disease, it is quite possible that she has only relative insufficiency. It is exactly in patients such as this that I think that the tonometer is of assistance in arriving at a diagnosis. Where we find a blood pressure decidedly high, an enlarged heart and a systolic murmur, with chronic nephritis, there is, in the great majority of cases, no valvular disease, the nephritis being primary and the murmur a danger signal of dilatation and failing cardiac power. This patient showed disappearance of headache and malaise whilst her arterial pressure rose 15 mm. under digitalis. Nitroglycerine, 1/100 grain three times daily, did not lower her blood pressure. In this group were also two readings of 100, one with good and the other with bad compensation.

Aortic insufficiency, 3 cases:—One well marked case, compensation good, pressure normal. One male, aged 39, pressure three days before death 135, five hours before death 120. Post mortem—heart very large, 500 grammes, vegetative endocarditis chiefly about aortic orifice, perforation of one aortic cusp, many infarcts in viscera, superior mesenteric artery occluded by embolus two inches from its origin, thrombosis of portal vein, peritonitis. One of 100, exquisite *pulsus celer*, orthopnœa, œdema, heart muscle enlarged, died two days after observation suddenly. Post mortem showed aortic obstruction as well as insufficiency, relative insufficiency of mitral, lumen of one coronary artery much diminished.

Two of these cases, then, were normal, and one subnormal. If this tonometer merely shows maximum pressure, as many contend, it appears that in these three cases the large pulse wave (arterial excursion), did not give a high reading. In many other patients with pulse beat small, feeble, intermittent and irregular, the reading has been normal or even over the normal. Possibly in pulses of large volume the maximum pressure is not really high, even in the water-hammer pulse. If the highest point of pressure coincides with the passage of a reflected wave centripetally (as contended by Ewart*) and is due to the interference of the primary and first secondary wave, then possibly the duration of the true maximum is too brief to be recorded by the instrument, and the reading obtained is approximately that of the mean pressure.

Disease of Aortic Valves and of Mitral Valves, 13 cases:—Six were normal, some with bad compensation. Four moderately high, 150,

---

* Ewart, Pulse Sensations. Baillière, Tindall & Cox.

165, 150, 150; all of the latter with albuminuria, and three of them showing serious symptoms of failing compensation. Of the subnormals one was 85, recovering from acute endocarditis and pericarditis; one 95, compensation fair; one 100, active endocarditis.

Myocarditis, 4 cases:—One male, aged 60, pressure 80, heart sounds weak and irregular, moderate degree of arterio-sclerosis. One male, aged 57, pressure 115 the day before death. Post mortem, myocardial degeneration, no valvular disease, slight degree of mixed nephritis. One female, aged 48, pressure 125 two weeks before death. Post mortem, infarct in cardiac wall at apex of left ventricle, old thrombosis left ovarian vein, no valvular disease.

The presence of normal cardiac tension is therefore no criterion of cardiac adequacy. There can be normal tension with little or no reserve power.

Hypertrophy and Dilatation of Heart of Unknown Causation, 2 cases:—One male, aged 49, pressure 120 two weeks before death. Post mortem, heart greatly enlarged hypertrophied and dilated, no valvular disease, no macroscopic evidence of degeneration, no arterio-sclerosis, no nephritis. The other was a male, aged 43; pressure 110 a few days before death. Post mortem, heart 600 grammes, much hypertrophy and dilatation, no valvular disease, no macroscopic evidence of degeneration, no arterio-sclerosis, no nephritis. No toxic history in either of these cases.

Aneurism, 3 cases:—One of ascending aorta, 160 mm. in June, 1901; 125 in September, 1902; both hands equal. One involving arch and innominate (?) 120 in January, 1902; 105 in June same year. One of ascending aorta, 75 in right hand, 55 in left. Unfortunately this patient was seen only once and opportunity to verify this extraordinary reading did not occur.

Acute Lobar Pneumonia, 18 cases:—Here there was an average for the series of 92.7, being the lowest average for any group. Only one died, and this was a case of pneumonia in puerperal septicæmia, in whom a pressure of only 55 mm. was recorded 5 days before death. One case showed 122 on the fourth day, but went down to 75 on the eighth day; severe attack, recovery. P. A., middle aged man, gave 60 on the third day after the crisis and was still only 80 on the day of discharge, two weeks later. J. D., a tall muscular laborer, severe case, 110 on the eighth day, crisis on the ninth day, 120 on the twelfth day.

In view of the low pressure almost invariably found in this disease and the fact that in none of them was the blood pressure at any time high, it does not seem that pneumonia offers a field for vasomotor depressants.

Pleurisy, 16 cases, 14 of them with more or less effusion:—Seven slightly subnormal, the others normal. Possibly absorption would be hastened if pressure could be raised when subnormal readings are found. One case of empyema with pneumothorax had pressure of only 75, which rose to 110 after aspiration of 42 ounces of greenish, purulent fluid. Other observers have found pressure higher before than after aspiration in pleurisy and ascites.

Tuberculosis of Lungs, 14 cases:—No high readings: in advanced cases moderately subnormal pressures almost invariably found.

Neurasthenia, 18 cases:—Thirteen normal; from 135 to 140: one of 160. In one case, a female, aged 40, the first reading was 180, but on subsequent observations fell to 135. A majority of these neurasthenics, and indeed a large proportion of women and a considerable proportion of men, give too high a reading at first measurement, probably from emotional influence (cortical stimulation). One a male, aged 28, had persistently the low reading of 80. He had indications of developing melancholia.

Malignant Disease of Viscera:—No high readings; all definitely low but two. One of these latter was in quite early stage, and the other had hæmorrhagic pleurisy. Low blood pressure is in favour of diagnosis of malignant disease, but is late in appearing.

Anæmia. 6 cases:—All normal. One chlorosis normal.

Pernicious Anæmia, 2 cases:—One very low (60); one well marked. 90.

Addison's Disease, 2 cases:—Both in early stage; both normal.

Purpura Hæmorrhagica, 1 case:—Normal.

Puerperal Septicæmia, 2 cases:—One prolonged case ending in recovery had an extremely low blood count (red cells 930,000, white 6,000), and hæmoglobin percentage 10 to 20, with mitral presystolic murmur, yet a blood pressure persistently slightly above normal (140);

urine 1015, half gramme of albumin to the litre. Another serious case has thus far a pressure of 100.

Gall-Bladder, 1 case:—With suppuration of intrahepatic branches of portal vein, septic pneumonia and metastatic abscesses, gave a blood pressure of only 50 mm. ten days before death, when her general condition was comparatively good. This is the lowest reading found in the whole 400 cases. The other very low one (55) was also in a septic condition (puerperal), with septic pneumonia, and also proved fatal.

Lead Poisoning, 1 case:—Male, aged 30, pallor, colic, tremor, convulsions, trace of albumin, pressure normal (110).

Jaundice, 3 cases:—One 80 mm. in a middle aged man proved fatal few weeks subsequent to observation. No post mortem; liver much enlarged. One case, normal; one 160, with trace of albumin. In all of these jaundice had persisted ten weeks or more at time of measurement.

Abdominal Tuberculosis, 4 cases:—Two slightly subnormal and two normal.

Tuberculous Meningitis, 1 case:—In a male aged 30, pressure of 115 two weeks before death.

Diabetes Mellitus, 2 cases:—One of five weeks duration in an elderly man with albuminuria gave a reading of 225 at one observation. Pressure afterwards fell during administration of nitroglycerine to 140. With the fall in blood pressure œdema increased, and his general condition became much worse; afterwards with rising blood pressure he improved. The other case, a male, aged 40, with 6 per cent. of sugar, moderate arterio-sclerosis, no albumin, pressure 105.

Exophthalmic Goitre, 2 cases:—In one of them, a middle aged woman in whom symptoms were well marked, pressure in October, 1901, was 130 mm.; December, 1901, 135. In January 1902, she began to take suprarenal powder, 2 grains three times daily. This was continued without intermission and in July increased to 3 grains three times daily. No rise of pressure was noted with the suprarenal, but systematic observations were not made. In February the reading on one occasion was 120; in May 135; in July 110. General improvement took place with increase in weight. The other case, which was not at all severe, had quite normal pressure (110) which was not definitely influenced by suprarenal powder.

Acute Articular Rheumatism involving the heart, 8 cases:—Six normal, 2 slightly subnormal.

Acute Articular Rheumatism, heart not affected, 5 cases:—One normal, 1 slightly subnormal.

Chronic Articular Rheumatism, 4 cases:—All normal.

Gonorrhœal Rheumatism, 8 cases:—Six normal, two moderately subnormal.

Rheumatoid Arthritis, 10 cases:—Six normal, and one of 85, one 95, one 100, one 105.

Gout, 4 cases:—Only one of them well marked. This one had albuminuria and moderate arterio-sclerosis, yet a reading scarcely over the normal (130). The others had normal pressure.

Hemiplegia, 1 case:—In the course of chronic nephritis, with heart negative and a moderate degree of arterio-sclerosis, showed high pressure in both hands, but 10 mm. lower in the paralyzed than in the sound hand. Another similar case with higher pressure gave equal readings in both hands. Two other hemiplegias with slightly low pressure had practically equal readings in both hands.

Tabes Dorsalis, 14 cases:—Eleven normal, 3 slightly raised, one of the latter having albuminuria, and two arterio-sclerosis.

Cerebral Tumour, 8 cases:—All normal pressure: one who gave a slightly high reading, but was suffering intense pain at the time of observation.

General Paralysis of the Insane, 1 case:—With moderately high tension, slight arterio-sclerosis, urine 1012, trace of albumin, normal.

Friedreich's Ataxia, 2 cases:—One with albuminuria and small amount of sugar in urine, slightly raised (140); one combined with cerebellar ataxia, normal.

Acute Ascending Paralysis, 1 case:—Involving phrenics, in a male, aged 27. Pressure was slightly raised (140) during worst phases of attack, and remained so during several weeks, but gradually came down and was nearly normal at time of discharge; no albuminuria.

Tic Douloureux, 2 cases:—One, 130 during attack; the other with slight arterio-sclerosis, 160 in the intervals.

Epidemic Influenza:—One case slightly subnormal (95).

Miscellaneous Cases 36; distributed over twenty-five different diseases, all showed normal pressure. They include:—Erythema nodosum, chorea, lumbago, pericarditis, erysipelas (in convalescence), tonsillitis, abscess of lung, hysteria, epilepsy, neuralgia, lateral sclerosis (3), disseminated sclerosis (2), muscular atrophy of spinal type, anterior poliomyelitis, sciatica, infective meningitis (middle ear disease), adenitis, appendicitis, lymphangitis, and gastric ulcer.

Most of these observations were made between 9.30 a.m. and 12 noon, some between 3 and 5 p.m., and a few between 1 and 2 p.m. Nearly all the patients were recumbent, only a small number were seated. Whenever the reading was other than normal it was repeated several times and on different days and the most constant result noted.

Many objections have been urged against the instrument as to its reliability. The uniformity of the results obtained in these 400 cases is a considerable testimony in its favour. It is useful in diagnosis, in prognosis, and in measuring the effects of treatment directed to the increase or decrease of arterial pressure. Probably in life assurance work this tonometer will find a field of usefulness.

Notes have been made in a few cases after administration of suprarenal powder, digitalis, nitroglycerine and erythrol tetranitrate. They are not sufficiently numerous to be particularly valuable. A rise of 43 mm. took place in three days in a cardio-renal case under digitalis in large doses. No considerable rise followed exhibition of suprarenal powder in four cases. Several high pressure cases taking nitroglycerine showed no fall. In one patient a fall of 80 mm. occurred under nitroglycerine in three weeks; but another high pressure, not getting nitro-glycerine nor any other vasomotor depressant, showed a variation of 60 mm. when followed throughout several months. In five trials of erythrol tetranitrate there was a fall of 10 mm. on one occasion and 18 on another in a high tension patient, also a fall of 10 mm. in each of two normal pressures, one of the latter remaining quite unaffected by a larger dose on a subsequent occasion. If, as stated by Oliver, the periodical, more or less rhythmical, variations in pressure in the normal individual may amount to 10 or 20 mm., then too much stress should not be laid upon variations within these limits following exhibitions of various drugs.

THE SUBCUTANEOUS INJECTION OF PARAFFIN WAX IN CORRECTING DEFORMITIES OF THE NOSE.*

BY

GEORGE K. GRIMMER, B.A. (Univ. of N. B.), M.D. (Edin.), F.R.C.S. (Edin.)
Assistant Laryngologist and Rhinologist, Montreal General Hospital.

To Gersuny[1] of Vienna is due the credit of introducing this method of treatment. He has used it with success not only in cases of nasal deformity, but for other defects in various parts of the body, *e.g.*, after removal of the maxillæ, to obliterate a hernial orifice, and after castration. His first cases of paraffin prosthesis of the nose were reported in 1900, in one of them two years had elapsed since treatment without impairment of the improved shape of the nose or softening of the paraffin, another had gone through typhoid fever without any ill result. Frey of Vienna has used this method to correct congenital defects of the pinna, Haskins[2] to fill in the cavity left after mastoid operations, Rhomer[3] and Dianoux[4] after enucleation, to improve the shape of the socket for an artificial eye, Pfannensteil[5], Gersuny[1], Klapsamer[6] and others for incontinence of urine, and Halban[7] for prolapse of the uterus.

It is however within the past year that attention has been drawn especially to the suitability of this treatment for correcting deformities of the nose, particularly for filling up depressions of the dorsum following syphilitic, lupoid and tuberculous destruction of the septum, and for flattening of the nose the result of traumatism. On the 21st of October last, Hamilton[8] of Australia, reported five cases of saddle-back nose treated by paraffin prosthesis, he being, I believe, the first writer in English to record cases treated by this method. Heath[9] of Chicago soon after reported a similar case in which he had obtained a very satisfactory result. Since then Scanes Spicer[10], Walker-Downie[11], Parker[12], Harmond Smith[2], Baratoux[13], and Delie[14] have reported cases of this type, and previous to Hamilton and, since Gersuny, Stein[15], Moszkowicz[16], and other surgeons in Europe have obtained good results.

Lake[17] of London has used the injection of paraffin wax to form artificial inferior turbinals in a case of long standing atrophic rhinitis, and claims that the result was most satisfactory after various other methods of treatment had failed.

What happens to the injected mass in the tissues? It is probable that the paraffin becomes encapsuled and Gersuny claims it remains so indefinitely. Meyer[18], however, thinks it is slowly absorbed, and Stein[15] that it is replaced by connective tissue.

---

* Read before the Canadian Medical Association, Sept. 16, 1902

Paraffin of what *melting point* is most suitable? The consensus of opinion of those who have recorded their results is in favour of paraffin melting at 104° F. In my two cases paraffin of that degree of hardness was used. In several experiments (carried out in the Pathological Laboratory of McGill University) on rabbits, with paraffin melting at 102°, 107° and 112° I got equally good results with each, but there seems some ground for believing that in the case of the human subject, paraffin with melting points of under 100° may be absorbed, while those of 112° and upwards may cause necrosis of the overlying skin. In my first case, a slight superficial necrosis of skin the size of a pea occurred, but this I believe was due to the increased tension and not to the density of the paraffin.

Preparation of the Patient.—Careful cleansing of the part to be operated upon, strict aseptic precautions generally, and perhaps the injection of a few minims of a one per cent. solution of cocaine is all that is required.

Method of Performing the Operation.—Various more or less elaborate methods have been suggested, but the following simple one meets the requirements. Sterilize the paraffin by heating to 212° F. in a covered beaker: allow it to cool to 120° F. as tested with a sterile thermometer; then place the beaker in a basin of water at 120°. Fill a warmed, sterile, 5 cc. solid metal, serum syringe, to which the needle is yet unattached, with the warm paraffin. Express any air bubbles, quickly screw on a warmed sterile large calibered needle, and place the syringe thus charged until required in a basin of a saturated solution of boric acid at 120° F.

The operation.—The needle of the charged syringe may be inserted from near the tip or root of the nose as is most convenient, but it should be entered at a point at least half an inch distant from the depression and be carried subcutaneously a little beyond the point of greatest deficiency, making sure that the sides of the nose towards the inner canthi and the tissues over the nasal eminence are firmly compressed by the fingers of an assistant or by some mechanical appliance to prevent the escape of the paraffin in these directions. The piston of the syringe may then be slowly compressed, the point of the needle moved about as required, and when the desired amount has been injected, withdrawn. The assistant still retains his finger at the sites indicated, while the operator moulds the paraffin as it hardens, which in my experience takes two or three minutes or even longer. It is advisable to continue to keep the paraffin in good position for ten or fifteen minutes, as until quite firm the elasticity of the nasal tissues tends to flatten it out. If the nasal orifices or cavities have been narrowed by the previous disease, it is advisable to introduce Asches nasal tubes of a suitable size during the operation and retain them until the paraffin hardens. Other points of importance are not to allow paraffin into the needle until the injection is commenced, and once started, not to stop compressing the piston until the operation is completed. Otherwise the needle will clog and cause much trouble and delay.

After treatment.—Apply flexile collodion to the needle punctures and place some absorbent wool over the part. If swelling of the nose and œdema of the eyelids commence, iced compresses and cold astringent lotions should be applied. Immediately after the injection the skin over the paraffin is very white; this is soon followed by hyperæmia. In several of the reported cases and in my own two cases there followed some swelling of the nose and œdema of the eyelids, which disappeared in a few days under cold compresses. In one of my cases (the first) the superficial congestion of the nose has been marked, but is gradually subsiding, now four weeks after operation. In this case numerous dilated vessels were visible through the skin of the nose previous to operation. In Heath's[9] case, redness persisted for about a month, then gradually disappeared. I have found that the application of an ointment composed of equal parts of suprarenal extract and vaseline to the hyperæmic area hastens recovery. My first patient suffered some pain in the nose on the first and second days after the operation, and the temperature rose to 99.8° F. and pulse to 120 on the second day. These were the highest points reached and the following day the temperature and pulse were normal and have remained so. In my second case no rise in temperature or pulse occurred, and no pain was felt during or after the operation.

The amount of paraffin required varies with the extent of the deformity to be corrected, but from 2 to 8 cc. is the amount that has been used in most of the recorded cases. When the larger amount mentioned is required, I believe it will be found best to inject it in two portions at short intervals, rather than the full amount at once, since if so done less reaction will follow.

The following are the chief points that have been urged against paraffin injections:—In one of Pfannensteil's[5] cases treated for incontinence of urine, pulmonary embolism followed, in this case 30 cc. of paraffin melting at 113° F. had been injected accidentally directly into a vein. Embolism of the ophthalmic vein has followed injection of paraffin into a vein in another case (Leser[19]). Meyer[18] claims that paraffin is more or less toxic, but no case so far has been reported in which undoubted toxic symptoms have occurred. Necrosis of the overlying skin has occurred, but serious destruction of tissue has not been recorded excepting after the use of paraffin of a high melting point, 112° F. or upwards. Paraffin embolism, I believe, is a real danger, but can only follow injection of this fluid into a vessel, hence is avoidable.

The points in favour of this method are:—(1) It proves successful in cases where the nasal deformity has been caused by destruction of bone and cartilage, and for which surgery has been able to do but little in the way of removing the defect.

(2) The ease with which the treatment is carried out and its comparative painlessness.

(3) Its freedom from risk of injurious after-effects, if care is taken to avoid injecting into a vessel and paraffin of a proper melting point is used.

In both my cases a marked improvement on the condition previous to treatment has been obtained, and although the results are not perfect, the gain justifies the procedure and a further trial in suitable cases.

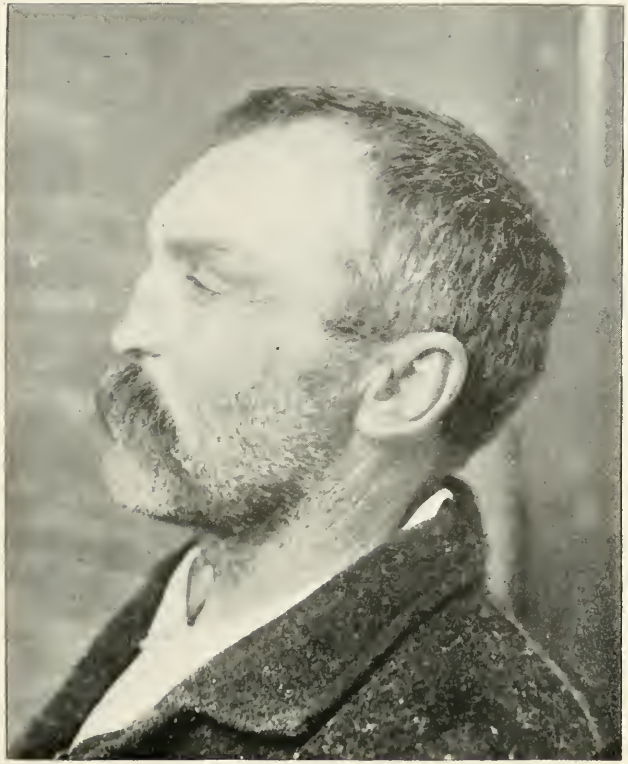
Case I. J.F., 47, sailor, 25 years ago received a blow on the nose which resulted in permanent flattening. Twenty years ago had syphilis. Seven years ago had bad necrosis of a portion of the septum which resulted in increased flattening of the nose.

Present condition.—Aug. 14th:—Marked flattening below the nasal bones, dilated vessels over surface. Almost complete obstruction of the left nostril with cicatricial tissue; right nostril also narrowed from same cause. No perforation in septum.

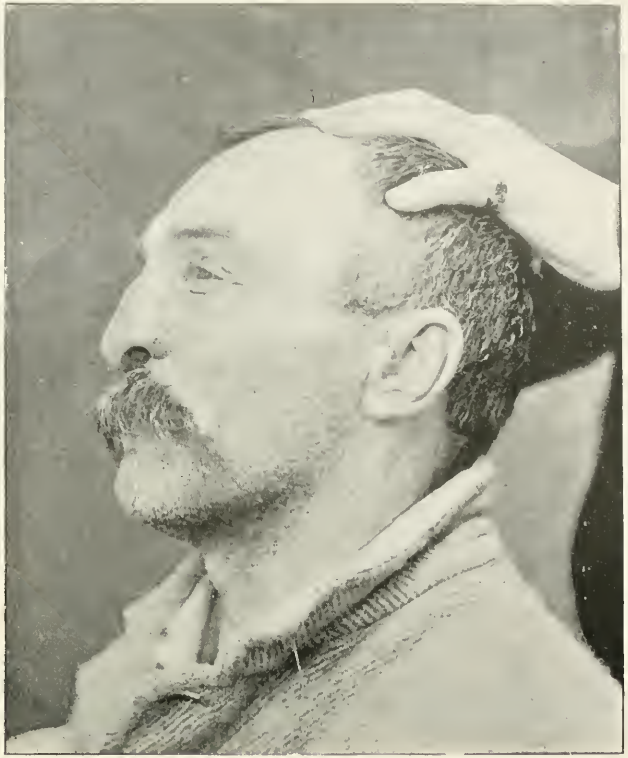
Aug. 16th:—Six cc. of paraffin melting at 104° F. was injected under the skin of the dorsum of the nose, 4 cc. from above the depression and 2 cc. from below it. The increase in elevation of the nose is about one-third of an inch.

The day after the injection the nose and eyelids were swollen considerably and there was slight elevation of temperature and pulse on the second day (99.8° F., 100).

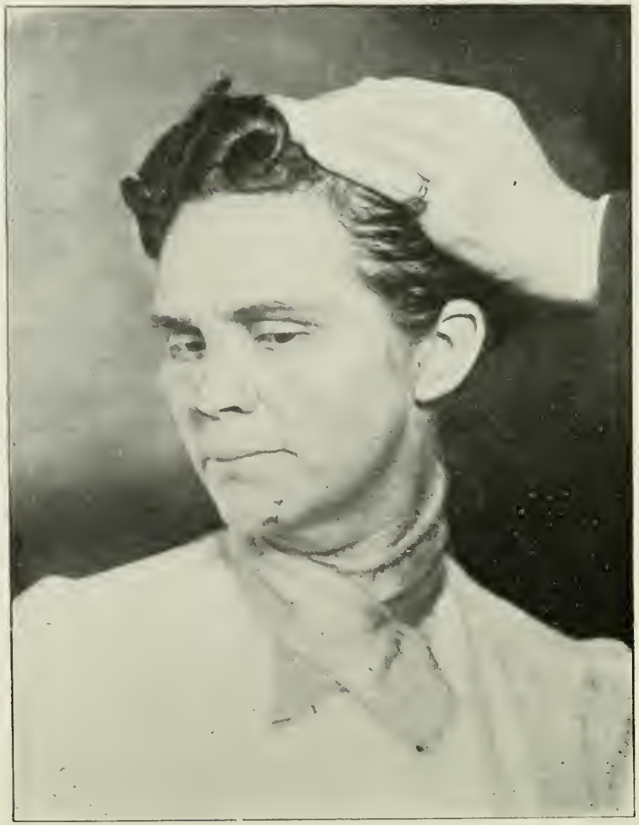
On the 18th, a small slough was noticed forming on the dorsum of the nose the size of a pea. All swelling had disappeared within a week; slough separated on the 2nd September. Hyperæmia of the skin still marked. On the 23rd September the cavity caused by the slough had completely filled up and the resulting scar was very slight. The left nostril was enlarged and a full sized Asches tube put in.



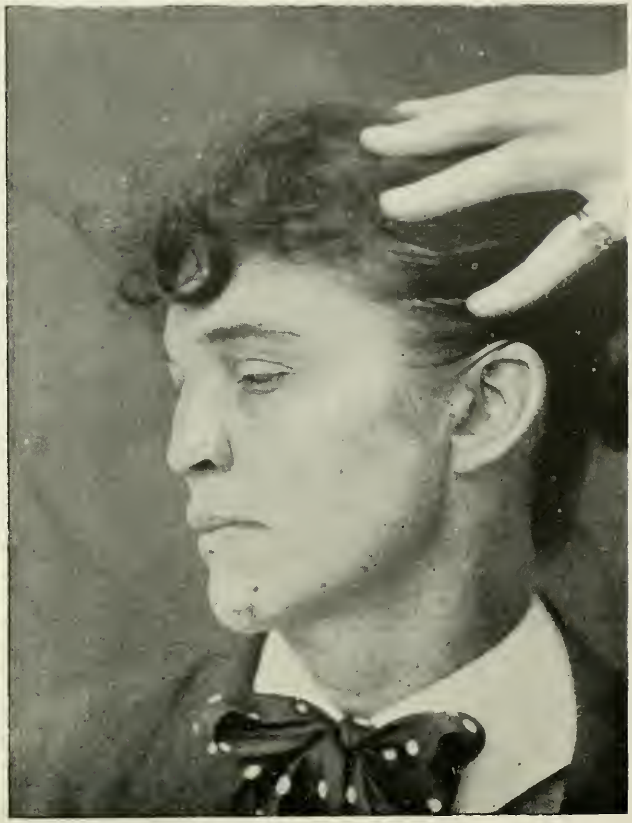
CASE I. BEFORE TREATMENT.



CASE I. AFTER TREATMENT (four weeks).



CASE II. BEFORE TREATMENT.



CASE II. AFTER TREATMENT (one week).

Sept. 30th:—Shape of the nose is very good, colour is nearly normal, breathing through both nostrils free.

Case II. Mrs. R., age 42, married fifteen years, four children living, youngest seven. Five years ago said she had a severe blow on the nose from a clothes line which she blames for her nose trouble; but the cause is clearly luetic.

Sept. 4th:—There is complete destruction of both the cartilaginous and bony septum and of the lower portion of the nasal bones, resulting in considerable falling in of the nose. The apex of the nose is deviated slightly to the left. There is a large perforation in the hard plate.

Sept. 6th:—Three cc. of paraffin were injected below the depression, the needle being entered ½ inch from the apex of the nose. Ten minims of a one per cent. solution of cocaine was previously injected. No pain was felt during the injection of the paraffin or since. The day following, some swelling was present in the nose and eyelids. This subsided in 48 hours under cold compresses. During the injection a small amount of paraffin escaped towards the forehead and lodged over the nasal eminence. Precautions had been taken against this accident, but sufficient pressure had not been maintained. The photographs illustrate the condition in each case before and after treatment.

BIBLIOGRAPHY.

1. Gersuny—"Ueber eine subcutane Prosthese," *Zeit. f. Heilk.*, Vol. I., 1900, pp. 200.

Ibid, "Paraffineinspritzung bei Incontinentia urinæ," *Central. f. Gyn.*, 1900, No. 48.

"Prosthese chirurgicale au moyen d'injections de vaseline dans le tissues," *La Semaine Méd.*, 1900, XX., 52, 433.

2. Harmond Smith.—"Subcutaneous injection of paraffin in the correction of nasal deformities," *N.Y. Med. Jour.*, May 17, 1902, p. 837.

3. Rhömer—"Prosthese oculaire au moyen de vaseline," *La Semaine Méd.*, April 10, 1901, p. 120.

4. Dianoux—"Des injections de paraffine après l'enucléation de l'œil," *Gaz. Méd. de Nantes*, June 1, 1901.

5. Pfannensteil, J.—"Zur Diskussion über die Paraffineinspritzung bei Incontinentia urinæ nach Gersuny," *Cent. f. Gyn.*, 1901, No. 2, pp. 33.

6. Klapsamer—*Weiner Klin Wochen*, No. 8, Feb. 21, 1901, p. 193.

7. Halban—*Cent. f. Gyn.*, 1901. No. 5, p. 134, and No. 27 pp. 800.

8. Hamilton, T. K.—*Australian Med. Gaz.*, Oct. 21, 1901.

9. Heath, A. C.—"Nasal Deformities corrected by Gersuny's Prothesis," *Amer. Med.*, Dec. 7, 1901, p. 893.

10. Scanes—Spicer—Trans. Laryn. Soc. London, Jan. 10, 1902.

11. Walker-Downie—"The subcutaneous injection of paraffin for removal of deformities of the nose," *Brit. M. J.*, May 3, 1902, p. 1078.

12. Parker, R. M.—"Paraffin injection treatment of Gersuny," *J. Amer. Med. Ass.*, April, 1902, pp. 1000.

13. Baratoux, J.—"Des injections de paraffine dans les cas de deformations du nez," *Progrès Méd.*, May 17, 1902, p. 313.

14. Delie—*Revue Heb. de Laryng. d'Otol. Rhin.*, May 31, 1902.

15. Stein—"Ueber die Erzeugung subkutaner Paraffinprosthesen," *Deut. Med. Woch.*, Nos. 39 and 40, 1901, pp. 670 & 690.

16. Moszkowicz—"Ueber subkutane Injectionen von Unguentum paraffine," *Weiner Klin. Woch.*, 1901, No. 25.

17. Lake, R.—*Jour. of Laryng. Rhin. and Otol.*, May, 1902, p. 257.

18. Meyer—*Münch. Med. Woch.*, 1901, No. 11.

19. Leser—"Amaurose par embolic de la veine ophthalmic après injection sous cutanée de paraffin pour prosthèse nasale", (Soc. Hambourg, 1901).

CONGENITAL DISLOCATION OF THE HIP—WITH NOTES OF THREE CASES.*

BY

A. E. GARROW, M.D.,

Lecturer in Surgery and Clinical Surgery, McGill University; Assistant Surgeon to the Royal Victoria Hospital, Montreal.

While congenital dislocation of the hip is neither a very common, nor yet a very rare deformity, I would say, at least judging from my own experience, that the number of cases which seek surgical relief is comparatively small.

Whether this is owing to the fact that the general profession have so far not been impressed with the results of surgical interference, or that these patients are so little inconvenienced by the awkward gait, deformed spine, the more or less suffering after unusual exertion, that they prefer—or rather their parents do for them—to remain deformed than to undergo the risks of surgical procedure; I really do not know.

My reasons for bringing this subject before the Society, are to elicit discussion on the treatment of a condition, which must interest every general practitioner as well as surgeon; and at the same time to present the report of 3 cases which applied for treatment at the Royal Victoria Hospital during the present year.

So far as I know, no satisfactory etiological reason for the deformity has been given, nor any to explain its more marked frequency in the female sex. Heredity is undoubtedly a factor.

The pathological changes are not such as follow unreduced traumatic dislocations, particularly is this true of the capsule, which in congenital dislocations, is not ruptured but is elongated, greatly thickened, and adherent to the surrounding structures, while it assumes not frequently an hour-glass shape, with more or less narrowed ring— the upper half containing the head of the femur, the lower half tightly stretched across the misshapen and almost obliterated acetabulum, to which it may or may not be adherent. This narrow ring and adherent lower sac constitute the chief obstacles in the bloodless operation devised by Post, in 1884, practised by Paci, in 1888, and perfected by Lorenz and Hoffa during the last decade of the 19th century.

The elongation of the pelvi-trocanteric muscles in this deformity, was pointed out by Dr. Shepherd, of Montreal, in his "Notes on the

---

* Read before the Canadian Medical Association at Montreal, Sept. 18, 1902.

Dissection of a Case of Congenital Dislocation of the Head of the Femur," as long ago as 1879; and Hoffa modified his original views concerning the part played by these muscles in preventing reduction of the dislocation, inasmuch as mechanical means are now adopted in his present technique to keep the head of the femur in the acetabulum after reduction, until these muscles have *shortened* and regained sufficient tone. The pelvi-femoral and pelvi-crural muscles are shortened, and constitute important obstacles to reduction.

The bending forward of the neck of the femur and the altered shape of the head of the bone may necessitate so much inversion of the leg after reposition that only an osteotomy can make the limb useful for locomotion.

The acetabulum, like the head, is misshapen. It is usually filled up with fibro-cartilaginous tissue, but as a rule it can be easily located by following the attachments of the capsule, at its lower end.

The pathological findings, however, vary widely according to the age of the patient. Mikulicz states that at birth the head and neck of the femur are nearly normal—the acetabulum is large enough to retain the head of the femur—the capsule is large and roomy—the ligamentum teres is either absent, or is thickened and elongated.

The changes in the joint just described do not occur until the patient has walked, and vary according to the age.

The symptoms and signs of the deformity differ according as the dislocation is single or double, and to the position of the head about the acetabulum; but as a rule, the condition is not recognized until the child commences walking—usually in the second year.

While a diagnosis is usually readily made, the following conditions have been mistaken for this deformity, viz., coxa vara, distortion following infantile paralysis, separation of the epiphysis, deformity following early arthritis of children, traumatic dislocations, deformity following hip disease.

In all of these, with the exception of coxa vara, there is a history of trauma or disease. In coxa vara, congenital dislocations, and in infantile paralysis we get free movement of the joint. Coxa vara is rarely seen before 5, the trochanter moves about the head of the femur, and does not alter its position on traction; besides, we get other evidence of rickets.

The disability of this deformity varies according to the position of the head, being most marked when it lies above and behind the acetabulum, the lameness and secondary spinal curvatures usually increase as age advances. There seems to be much divergence of opinion among observers as to whether actual pain is a prominent symptom.

Bradford, of Boston, in a recent communication, says: "The collected experience of the operative treatment of congenital dislocation of the hip joint has demonstrated the following facts: 1st. In many cases successful reduction of the dislocation has been performed. 2nd. Frequently, however, relapse has occurred after apparently successful reduction. 3rd. Relapse is more frequent after the operation without incision than after operation with incision."

Time will not permit even of a short summary of the various methods of treatment and their modifications, which have been employed in dealing with this deformity. At the present time reduction is effected chiefly by two methods. The so-called bloodless method, as perfected and practised by Lorenz and Hoffa; and, 2nd, reduction through an open incision.

During the last year or two many cases of successful permanent reduction by the bloodless method have been reported; and Ochsner, of Chicago, recently described the condition of a joint three years following treatment, as follows:—The head of the femur was covered by cartilage, and lay in an acetabulum which was almost as deep as the opposite and normal one, the capsule contracted and shortened, hugging the neck as in a normal joint.

Success by this method depends upon the age; in children over 2 and under 5, and in some instances between 5 and 7, forcible reduction under an anesthetic can be successfully used. Where relapse occurs after this method, it is believed to be due to a fold of the capsule lying between the head and the acetabulum, which, in successful cases, becomes absorbed by pressure atrophy. The operation is carried out under a general anesthetic, the pelvi-femoral and pelvi-crural muscles are forcibly stretched by manual traction, or by multiplying pulleys, or other device, assisted if necessary by tenotomy of unyielding muscles. Extension is continued until the trocanter lies at the level of Nelaton's line: counter-extension is secured by placing a well padded strap over the perineum. At this stage the thigh is steadily abducted, rotated inwards and flexed. The operator steadying the pelvis attempts to gradually lift the head over the posterior border of the acetabulum, when, if successful, the head enters into the cavity with a distinct shock. Evidences of successful reduction are seen in lengthening of the limb—fullness in the groin, the absence of the head from the ilium—an increased tenseness of the hamstring muscles. Reposition is maintained by applying a snugly fitting plaster of paris bandage to the pelvis and thigh in the abducted and slightly over-extended position. The child is allowed to walk at the end of 10 or 14 days, is in fact encouraged to do so. The first bandage is allowed to remain on for 4 or 5 months, and is replaced by another in diminished abduction, and if necessary, a third bandage for another month or two, until the operator is satisfied that the structures are sufficiently strong to maintain the correction. Ochsner reports Lorenz with 212 cases, giving 108 anatomically and functionally perfect results; 102 anatomically imperfect, but functionally good results. Now, with this compare Bradford's statistics from 1899 to 1900. Seven cases, 10 hips; all reduced by bloodless operation, and all relapsed.

The bloodless method, even in the hands of skillful operators, gives but 50 per cent. of perfect anatomical repositions. The operation is by no means devoid of danger, death having occurred from gangrene of the limb, shock, besides minor accidents, as fracture of the neck of the femur, paralysis and hæmatomata.

My own experience has been chiefly by operative procedure, employing an anterior oblique incision, running from the anterior superior spine downwards and outwards, just below the head of the trochanter, exposing the capsule by separating the tensor vaginæ femoris from the gluteus medius, opening it by an incision running parallel to its axis, and separating the outer extremity of the capsule from the neck, both on its anterior and posterior aspects; thoroughly separating the structures inserted into the trochanter minor. (This is of prime importance). If traction with abduction now fails to place the head of the bone in the acetabulum, tenotomy of unyielding structures ought to be performed. In future, in children over 7 with much shortening, and especially where the muscles have been well developed, I shall operate in two stages; 1st, doing a preliminary tenotomy on the muscles and fascia which do not allow of extension and abduction, maintaining this gain by some form of extension apparatus; and then, when the wounds have healed, doing an arthrotomy. In the two cases operated on, I deepened the existing acetabulum by means of a Volkmann's spoon. I think, however, in future that the maintenance of reposition can be secured by resorting to more extensive tenotomies.

Success in the operation depends upon:—1. Perfect asepsis. 2. Avoidance of injury to the head and acetabulum. 3. Perfect removal of all causes which tend to drive the head on to the ilium. 4. The application of the head to the acetabulum, without the intervention of any portion of the sac; and, lastly, the maintenance of the abducted position, until the structures about the joint have adapted themselves to the new arrangement of the parts.

Drainage by thin strips of rubber tissue, carried into the capsule should always be employed. The dangers of the operation are shock, sepsis and ankylosis. The after treatment should be carried out along the same lines as for the bloodless method.

The ultimate results, when successful, have been, useful joints, with from 2 cm. fo 3 cm. of shortening. Motion is usually somewhat restricted.

Bradford's statistics for the 10 cases already referred to, 9 of which were submitted to open incision, are: 4 hips were firmly replaced, as shown by x-ray; 2 hips were firmly replaced, but no x-ray; 1 hip apparently replaced, as shown by x-ray; and 1 not submitted to operation. Relapse however occurs after the open, as well as after the bloodless method.

Case I.—A. C., female, aged 9, entered hospital February 14, 1902. Parents state that the child could not walk until 2 years old, and that at that time nothing unusual was noted. But a year and a half later, a gradually increasing limp, without pain, and without a history of trauma or disease, developed. The lameness has steadily increased until the present. The child does not suffer much pain, but is easily tired out after a long walk.

On walking, the child lurches forward on the left side with a characteristic waddling gait. The left leg is 2 inches shorter than the right and is less muscular. The left gluteal fold is not prominent, but a marked prominence corresponding to the head of the femur and lying behind the trochanter and above Nelaton's line can be readily made out. The upper border of the great trochanter descends on traction of the leg.

On February 28th, the patient was anesthetized, the capsule opened by Lorenz method, the misshapen head (flattened and semi-ovoid), after freeing the capsule from the neck, as well as the structures inserted into the lesser trochanter, was replaced in the deepened acetabulum with very great difficulty. The capsule was partially closed by catgut, drained by rubber strips, and the limb fixed in plaster of paris in an exaggerated abducted and slightly flexed position. By the end of the fifth week the wound had perfectly healed, at each change of dressing gradual abduction had been practised, until the leg was brought parallel with the other. At this time, in order to prevent ankylosis, which was to be feared, owing to the extensive deepening of the acetabulum at the time of operation, I did not apply the plaster of paris dressing, but was practising daily, passive motion. Measurement showed at this time less than half an inch of shortening. On April 12th, on exposing the limbs preparatory to employing passive motion, I was considerably chagrined to discover a shortening of an inch and a half and a displaced head. I immediately put the limb up in extension, and later on tried to replace the head by the bloodless method, but I feel that while I have improved the position, the head does not lie in the acetabulum, and there is a shortening of ¾ inch.

Case II.—C. N., aged 4, female. Admitted January 28, 1902. The mother says the child was the first-born, and that it cried more or less constantly for the first four months. It walked at 15 months, with a decided limp, though no deformity was detected. The limp has continued to increase, though the child does not complain of pain even after running about a great deal. On walking, the child lurches to the left, pelvis tilted to the left, gluteal muscles of the same side flattened and broadened, well marked lateral curvature of the spine, the trochanter lies one inch above Nelaton's line, and the head of the femur lies behind and somewhat above the trochanter, and can only be felt indistinctly.

The child was kept in bed for some time, and by extension and abduction frequent attempts were made to stretch the contracted muscles.

On February 18th, operation was performed in the manner described in the previous case. On February 21st, the first dressing and drainage tube removed. On February 25th, owing to elevation of the temperature, a second dressing was done, and a superficial dermatitis, believed to be due to the soakage of the iodoform gauze with urine, was discovered. On March 2nd, the wound was perfectly healed and the leg put up in diminished abduction. April 1st, the patient was discharged, walking on a slightly abducted limb.

I had arranged to show this patient at this meeting, having reapplied the bandage last Saturday; but the father, who does not live in Montreal, refused to allow his child to remain in the hospital.

Careful examination at that dressing shows free movement in every direction, with a shortening of less than ¼ inch. It is interesting also to note that the child still walks with a limp, though the trochanter holds it position firmly on stepping.

Case III.—K. C., aged 8, female, entered the hospital April 14, 1902, complaining of an abnormal gait in walking and a deformity in the back. The peculiar duck-like waddling has been noticed since she began to walk, and is steadily getting worse. There is a very marked lordosis; besides a right lateral dorsal curve and a smaller left lumbar curve. The right trochanter is more prominent than the left; both buttocks flattened; the right gluteal fold is deeper than the left. The lordosis disappears on lying down, and there is free movement in both hip joints. Internal rotation can be carried further with the right than with the left leg; external rotation further with the left than with the right. A very indefinite mass can be felt behind both trochanters, but the trochanters seem to move in the arc of a circle, on rotation, and they lie about 2 inches above Nelaton's line. The child shows evidences of rickets at the lower ends of the radii, costa-chondral junctions, and at the lower ends of the tibæ. Extension at first failed to cause descent of the trochanters, and x-ray plates did not help to clear up the diagnosis. I was at first inclined to look upon the condition as double coxa vara; but the next day, after resting in bed, forcible extension made the trochanters descend a full inch, and I was able to demonstrate the rotation of the femoral heads about the trochanters, establishing a diagnosis of double congenital dislocation. The parents refused to have any form of treatment attempted, and removed the child.

My experience is too limited to compare the results of these two methods of treatment; at the same time, I am convinced from the examination of the two cases in question, reposition other than by open incision would have been practically impossible, owing to the very marked hour-glass contraction, in one case scarcely admitting a lead pencil. I would like to emphasize the importance of :—

1. Preliminary stretching and tenotomy.
2. Free separation of the femoral attachments of the capsule.
3. Thorough separation of the structures attached to the lesser trochanter.
4. Drainage.
5. Proper fixation by a suitable bandage.
6. *Prolonged fixation* until structures have adapted themselves to the parts.
7. Exercise and gymnastics.

I wish to express my thanks to Dr. Shepherd for permission to use the specimen here shown, and for his kindness in drawing my attention to the article referred to; as well as to Dr. Evans, of Ottawa, who kindly sent me two of the cases reported.

HEMIHYPERTROPHY WITH MULTIPLE NEURO-FIBROMATA.*

BY

W. S. England, M.D.,

Professor of Surgical Anatomy and Demonstrator of Anatomy, Manitoba Medical College; Surgeon to the Winnipeg General Hospital.

I.M.B., aged two years and two months, was sent to the Winnipeg General Hospital suffering from a malformation of the left side of the head and face, this side being much larger in all dimensions than the right side.

Present Condition.—The left ear is nearly twice the size of the right, and from it there exudes a sero-purulent discharge. The external auditory meatus is so œdematous that it is impossible to see the drum membrane. Under the left mandibular bone is a mass of tissue, which is soft and elastic to the touch. It is apparently not adherent to the underlying tissues nor to the skin. No fluid could be withdrawn from this tumor by an exploring syringe.

This mass extends upwards beneath the left side of the tongue which is pushed upwards, backwards and to the right, giving an appearance somewhat resembling two tongues. The tumor formation also extends beneath the skin of the left cheek nearly to the angle of the mouth, and as high as the zygomatic arch; also behind the ear over the mastoid process and occipital bone and to a less degree down the side of the neck over the posterior triangle. The whole mass is movable to a limited degree, is soft, elastic, and here and there throughout its structure many small harder masses, about the size of melon seeds, can be felt.

The left alveolar processes of both maxillæ are very much thicker and larger than those of the right.

The left eye-ball is greatly enlarged as compared with the right, and there is a considerable degree of proptosis. The cornea is covered over with a dense nebula.

The hair of the left eyebrow is much coarser and more abundant than that of the right side; and the hair of the left side of the head is coarser and less inclined to curl.

Sensation and motion of the affected side are apparently normal.

The child otherwise is of normal development, but is very thin,

---

* Part of a paper read before the Students' Medical Association.

having lost flesh very rapidly, especially during the last month, although she takes her nourishment well considering the deformity.

Family History.—There are four brothers and sisters in the family, all being healthy, and there is no neurotic history in her ancestors.

Personal History.—The mother, who is a very intelligent woman, gives me the following facts as to the child's personal history: She states that the child was born with the left half of the face apparently swollen, and that soon after birth she had opthalmia neonatorum. which affected both eyes, but that she would open the left eye to light, as it was blind, although she could not open the right eye. She states that the left side of the face did not perspire as much as the right, and that it felt colder and would not flush up like the right side. The left eye from birth is stated to have been larger than the right, and of a blue color with a hazel-like opacity over the cornea. The right eye was dark brown in color. When about six weeks old the child had some spasms one day, which may have been a slight convulsion. She had a decided convulsion about January, 1899; also a slight convulsion again when about two years old. The child was never able to walk, but could sit up alone. Her intellect was considered sound, but she did not make use of it as soon as an ordinary child. She never appeared to pay attention to anything going on around her until about seven or eight months old, but as she grew older she apparently understood what was said to her and would play with the other children and laugh at them. She never talked, but the mother thinks she would endeavour to say "mamma," and she would indicate her wants by motions and gesture. From November, 1898, until the time of her death she suffered much from indigestion. The mother also thinks that the child was deaf in the left ear, which discharged from the time she was nine months old. The patient was drowsy and slept the most of the time until the stomach trouble began, after which she was very wakeful and cried. The labor at the time of the birth was slow but normal. The child never met with any accident nor injury. Apparently she did not suffer very much, if any, pain in the head, but had some discomfort in the left ear.

Notes.—While in the hospital the patient had a septic temperature, ranging from 99° F. in the morning to 102° F. in the evening.

Treatment.—She was given small doses of thyroid extract and her general condition treated. She gradually failed in strength and died August 5th, 1899.

Accompanying is a photograph which shows the more abundant development of the hair of the left side of face and head, as well as the increased size of the left half of the face and ear; also the tumor under the tongue and the general appearance of the child.

We only secured permission to do a partial autopsy, at which a large neuro-fibroma involving all the cranial nerves which we were able to examine, was found, *viz.*—the facial, lingual, hypoglossal, glosso-pharyngeal, pneumogastric and spinal accessory, as well as the first cervical nerve.

These nerves were much enlarged, some of them being the size of a lead pencil and larger with tendril-like prolongations and convolutions of numerous bundles of nerve fibres, with nodular swellings at various points, which were intertwined in a tangled mass. The nerve trunks were more yellow in color than a normal nerve, and were embedded in an abundant amount of loose fibrous connective and fatty tissue. The nerves were traced from various cranial orifices nearly to their terminations, and were found enlarged throughout.

The left half of the superior and inferior maxillæ were much hypertrophied, being about twice the thickness of the right side. Unfortunately we were not allowed to examine the brain, and were unable to secure the bones of the cranium.

The above case is worthy of note, inasmuch as it may add some further knowledge to the "Trophic nerve function theory." It comes under a class of cases in which you find an exaltation of the normal trophic nerve function, and the condition is characterized by an overgrowth and new formation of bone, fibrous tissue, etc. Examples of this state may be met with in the "bony formations" seen in arthritis deformans, in multiple exostoses, in that rare form of bony overgrowth and tumor formations affecting the bones of the skull, known as leontiasis ossea, in acromegalia, and in the cases of unilateral hypertrophy of the skull; it being a good example of the last.

This is a rare condition, and as far as I am able to learn, only two or three similar cases have been reported. The normal trophic nerve influence has been sufficiently established by physiological research and clinical evidence, so that it is unnecessary to dwell on it further. Any aberation of it may be regarded as the essential factor of the pathological changes met with in a considerable number of diseases.

Besides the one mentioned above, in which the trophic force is exaggerated, there is a second group of cases in which this force is found to be in abeyance, and the diseases resulting are characterized by the retarded or arrested development of the parts of the skeleton concerned. Examples of this pathological process are found in the arrested development of the bones of the limbs, in infantile paralysis, in the hemiplegias occurring in early life, in the muscles of the face, in congenital wry-neck, and in hemiatrophy facialis.

A third group of cases include those in which you have a perversion of the trophic nerve influence, and the diseases are characterized by degenerative and atrophic changes in the bones and soft tissues connected with the trophic nerve centres.

Examples of this class are to be found in the fragility of the bones of the insane, in the degenerative changes, which go to make up the affection known as senile arthritis and malum senile of bone; in osteo-malacia, in osteo-porosis or senile atrophy, and fragilitas ossium; in spinal athropathy or neuro-paralytic atrophy of bone, near joints, and in the pathological condition, known as Charcot's disease, as exemplified in certain diseases of the spinal cord, such as tabes dorsalis, myelitis, laceration of the cord, and degeneration due to compression.

Poumer included rickets in this class, and advanced a similar neurotrophic theory to account for its occurrence. A fourth group may be added, in which you find this trophic nerve force completely lost, and ulceration or gangrene resulting, as is frequently seen after nerve section.

In looking up the literature of hemi-hypertrophy facialis, I find that Alexis Thompson reported a case of unilateral hypertrophy of the bones of the left half of the head and face; the bones of the right side being normal. The affected side showed besides a general hypertrophy of the bones, a condition of hyperostosis, due to an over-active periostium. Associated with the various forms of overgrowth of the left side of the skull, there was found a very pronounced enlargement of the grooves, canals and foramina for the nerves and blood vessels on the same side, more especially of those which serve for the transmission of the different branches of the 5th nerve, *viz*:—The foramina rotundum and ovale at the base of the skull, and to an equal degree the supra-orbital, infra-orbital, malar and mental foramina in the bones of the face.

He said the enlargement of these foramina were undoubtedly associated with a corresponding enlargement of the nerves passing through them. The bony changes corresponded with the greatest accuracy to the area of distribution of the 5th nerve.

This association led him to the conclusion that it was a tropho-neurosis, and that the specimen afforded sufficient grounds for the inference that there exist certain fibres in the 5th nerve, which preside over the nutrition of the bones to which they are supplied, and which when their function is exalted, may cause overgrowth and tumor formation throughout their area of distribution.

His case was that of a man, who died at 53 years of age in an asylum, his father had died of insanity, and there was a history of epilepsy major in the patient, since infancy. He could read and write, and had learned a trade, but after the age of 23, the fits began to tell on his mind and he became of an irritable, hot tempered and morose disposition, and later became very maniacal. Though his face was deformed, his expression was intelligent, and he could converse rationally, his articulation was slow and deliberate, his memory was good, and his sight and hearing were normal. He died comatose in the status epilepticus.

At the autopsy, the membranes of the brain were found healthy, except for a disk-like plate of bone found in the falx cerebri. The entire brain weighed 50 ounces, of which the left hemisphere equalled 16 ounces and the right 25 ounces. The convolutions on the anterior and superior aspects of the frontal lobe on the left side were flattened, atrophied and displaced by the large bony tumor. Nothing further was noted abnormal.

Dr. Thompson inferred that this case began in early life from the symptoms.

Another case, reported by Jonathan Hutchison, showed an unilateral overgrowth of all the bones of the right side of the face and head and limited precisely to this side.

The early history of his case was unknown, but the changes only became conspicuous in middle age. He calls the condition the converse of hemiatrophy facialis. He considered that hemiatrophy was a misnomer since it is not an atrophy in the sense of being a diminution of anything that previously existed, but simply an arrest of growth in an early stage of childhood.

He states that he had only seen one other case in a living patient, in which there was reason to believe that a similar condition existed, though to a much smaller extent.

The gross pathology of the nerves, as found in hemihypertrophy facialis is described by Warren as follows:—" A plexiform neuroma, which consists of numerous bundles of nerve fibres with nodular swellings at various points, bound together and intertwined in a tangled mass. They are held together by a loose connective tissue, that lies in a fold or folds of the skin, which is hypertrophied and pigmented and covered with a thick coarse hair. The tumor is congenital, and is usually situated on the scalp, neck or on the cheek. There is a thickening also of the connective tissue structures of the skin, particularly those surrounding the blood vessels and the hair follicles, such as you see in multiple fibroma. The growth is regarded by many as a local elephantiasis of the nerves."

This pathological description applies in its entirety to my case, excepting that the lesion in this case is more general than in those previously recorded. It is of interest to consider the converse condition—hemiatrophy facialis—from a pathological standpoint, especially in regard to this case, where the lesion was found to be so extensive.

Hemiatrophy is a more common condition and consequently its etiology and pathology have been more studied. In it all the tissues of the affected part are atrophied, including the hair, bone, muscles, etc. Very different views as to its pathology have been advanced. Some suggest that it is due to a lesion of the connective tissue, which produces atrophy of the surrounding tissues, by interfering with the circulation. The majority of observers say it is due to some nerve lesion in the medulla oblongata, in the peripheral nerves or in the sympathetic system.

Virchow styles the disease "a neurotic atrophy of the face." Jonathan Hutchinson considers it to be due to an arrest of growth following an attack of morphœa of the 5th nerve in early life. Virchow's case at the autopsy showed a condition of interstitial neuritis of the 5th nerve. The motor and sensory ganglia of the nerve were unaffected, but the descending root of the nerve within the medulla oblongata was atrophied.

Bramwell said " that it was due to a lesion of the trophic rather than of the sensory or motor parts, and that because in his case sensation and motion were unimpaired, the lesion was of central origin. And it is difficult to suppose that a peripheral neuritis could so markedly impair the trophied functions of the nerve without at the same time producing more distinct disturbances of its motor and sensory functions, than are usually present. Still it must be allowed that the disease frequently develops after some local injury to the face, which is in favor of its peripheral origin." However, most authorities agree that the ultimate lesion is situated in the central trophic nerve cells, and that the nerves to the face pass through these ganglia and leave them through their axis cylinder processes. Destruction of these cells leads to degeneration and atrophy in the motor nerves and muscles, and inasmuch as there was atrophy of the temporal and masseter muscles in several cases reported, went to prove the lesion to be one of the 5th nerve.

Also in the cases reported, there was no anidrosis. This would go to establish that the vaso-motor nervous system was performing its function normally.

Now granting that facial hemiatrophy is the result of a nerve lesion, it must, I think, be allowed that the several cases reported point to the existence of a nerve apparatus which presides over the nutrition of connective tissue, fat, bone, etc., and which is separate and distinct so far as function is concerned from the motor, sensory, vaso-motor and secretory apparatuses. Formerly, it was considered that the lesion which produced hemiatrophy was confined to the 5th nerve, but the fact that in many or most cases of this condition, the half of the tongue on the affected side is also found to be markedly wasted, is of great interest, and has an important bearing upon the pathology of the disease. And as the multipolar cells of the hypoglossal nerve nucleus are considered to exert a similar trophic influence on the development and tonicity of the muscular fibres of the tongue, through the hypoglossal nerve, hence with hemiatrophy of the tongue also present the conclusion is that the lesion must involve these multipolar cells of the hypoglossal nerve nucleus or peripheral prolongations as well as those of the 5th nerve. Further, in support of the theory that the hypoglossal nerve nucleus is also affected in connection with hemiatrophy facialis several facts may be advanced:—In hemiatrophy of the face the facial muscles, which are supplied by the 7th nerve are not atrophied or only very slightly. In some cases of chronic progressive bulbar paralysis the loss of motor power is not directly proportionate to, or dependent upon, the degree of muscular atrophy which is present. In this disease you get a degenerative atrophy of the motor nerve cells of the medulla oblongata, similarly as you get the same change in motor nerve cells of the anterior cornua of the spinal cord in progressive muscular atrophy.

This lesion of the hypoglossal nerve centres although theoretically granted, still requires to be demonstrated. But if it is true that they are affected, then the theory that facial hemiatrophy is due to a lesion of the trophic fibres or trophic centres connected with the 5th nerve, is incomplete, and from analogical reasoning as demonstrated in the converse condition of hemihypertrophy facialis, as seen in my case, what Bramwell surmised, is correct *viz*:—"If it should be proved that in some cases of the disease the lesion involved a motor nerve (the hypoglossal) or its nucleus, it will further, I think, be necessary to allow that the lesion may probably in some cases be still more extensive."

ON THE OCULAR MANIFESTATIONS OF SYSTEMIC GONORRHOEA.

BY

W. GORDON M. BYERS, M.D.,
Assistant Surgeon to the Eye and Ear Clinic, Royal Victoria Hospital, Montreal.

While apart from direct contagion a definite connection has long been noted between gonorrhœa and various ocular affections, our knowledge in this field has of late years become fuller and more rational through a better recognition of the systematic phases of specific urethritis and finer bacteriological methods of examination.

A study of the structure of the eye might lead one to think that Tenon's space, forming as it does a perfect serous ball-and-socket joint, would be, par excellence, the local situation for gonorrhœal trouble occurring in connection with the organ of sight; but with the exception of the case of Puech, which occurred three weeks after the onset of a specific urethritis with the usual signs of swelling of the lids, chemosis, proptosis and fixity of the globe, examples of tenonitis secondary to gonorrhœa have not been reported.

Rare indeed are the cases of retinitis, neuro-retinitis, dacryoadenitis and keratitis, though examples of all these conditions consecutive to a general infection from a specific urethritis have almost certainly occurred.

It is rather in the vascular structures of the eye (the uveal tract and the conjunctiva) that systemic gonorrhœa expresses itself most markedly.

The manifestations in the uveal tract vary considerably in character. One sees first of all a pure inflammation of the iris with all the common signs which can hardly be distinguished from an iritis due to other causes. There is missing, of course, the condylomatous tumefaction not infrequently present in the specific form, and on the other hand the anterior chamber may be occupied by a gelatinous exudate which is somewhat characteristic of the condition. Foerster's experience was that exudates were not so rich or so quickly formed in this as in the specific variety; but though one's impressions are in accord with this view it can only be regarded as a rough generalization.

We meet with, further, the well-known serous cyclitis marked by dilatation of the pupil, cyclitic deposits on Descemet's membrane and a tendency to secondary glaucoma; and lastly, the so-called irido-

---

* Read before the Canadian Medical Association, September, 1902.

choroiditis, in which, in addition to the usual signs of iritis, one has diminished tension and marked impairment of vision from vitreous opacities consecutive to the choroidal disease.

The form of conjunctivitis which occurs in systemic gonorrhœa, though frequently mentioned in the text books since the days of St. Ives, and classically described by Fournier in 1866, is even yet not generally recognized by the profession. This so-called "metastatic conjunctivitis" is of much more common occurrence than the inflammation due to direct inoculation of the mucous membrane of the eye by the organism of Neisser, and the two conditions are to be carefully distinguished from one another. In the one instance we have simply an ocular manifestation of a general infection secondary to a specific urethritis; in the other a purely local contagion, which corresponds to the primary urethral inflammation in the first form and which may, like it, give rise to metastases in other parts of the body, as witness the fairly numerous cases of arthritis occurring after ophthalmia neonatorum.

Clinically metastatic conjunctivitis affects as a rule both eyes of the individual, and especially those parts of the conjunctiva known as the fornices. It is accompanied by a mucoid, or at most muco-purulent discharge and the subjective symptoms are characteristically slight out of proportion to the intensity of the inflammation. The disease runs always a favourable course and expends itself in a few days even though no special treatment be adopted. The corneæ are never implicated. Relapses are prone to occur, and as proof of its nature metastatic conjunctivitis is commonly associated with arthritic or iritic manifestations of the systemic infection and not infrequently alternates with these conditions.

This is indeed a very different picture from the violent and destructive inflammation due to direct inoculation; but what finally differentiates the conditions is the bacteriological examination. In a case of gonorrhœal ophthalmia one has no difficulty in demonstrating the presence of Neisser's organism by the simplest methods, but in the metastatic form of gonorrhœal conjunctivitis both coverslip and culture media give entirely negative results. The observations made in this field during the last few years have been so numerous and so competent that the question of there being really a metastatic form of gonorrhœal conjunctivitis seems beyond all doubt.

How frequent are the ocular manifestations of systemic gonorrhœa may be gathered from an analysis made of the records at the Royal Victoria Hospital:—Of 80 cases admitted for this condition, and suffering for the most part from articular affections, eight or ten per cent.

showed during their stay in the institution, well marked ocular symptoms. To be more particular, four of these presented a pure iritis; one case an iritis which was followed after an interval of time by episcleritis and hyperæmia of the iris; one more irido-chloroiditis with posterior synechiæ, vitreous opacities and diminished tension: and finally two metastatic conjunctivitis.

The description of these conditions has been embodied in my foregoing remarks; I will only add that in the cases of conjunctivitis bacteriological examination in one instance failed to reveal the presence of the gonococcus, while in the other pyogenic organisms (staphylococci) only were found.

As with the arthritic troubles so with the ocular affections, the interval which elapses between the primary infection and the occurrence of these conditions varies in different cases. Usually a period of three to four weeks intervenes, but in one of the hospital cases three days only elapsed, while in two others iritis manifested itself after eleven and thirteen years respectively, though in the intervals, to be exact, the patients had suffered from fresh infections and relapses of their joint troubles.

Commonly the eye manifestations follow those in the joints, but the sequence may be the other way about, inasmuch as in three of the hospital cases ocular changes were the first indication of a general infection.

The fact that in gonorrhœal rheumatism each fresh urethritis is almost certain to be followed by an even more intense outbreak of the condition is well-known and cannot be too strongly pointed out to those affected.

To the oculist, the question of the eye being the sole site of expression of a systemic gonorrhœa is of practical interest. There is probably no eye surgeon of any experience who does not know that this condition may exist, but there is undoubtedly a marked divergence of opinion as to the frequency with which it occurs. But, pending further enquiries, we have always before us the possibility, and we shall do well, as has been remarked elsewhere, to make a *careful* enquiry as to gonorrhœa in every obscure infection of the eye.

What the exact pathology of systemic gonorrhœa is has not yet been fully worked out. We must believe from the valuable clinical and pathological work in this field, that the gonococcus itself plays a very important role in the production of the condition, more especially since it has been shown that the organism of Neisser may at times assume pyogenic properties. The possibility of toxines producing inflammatory phenomena cannot at present, however, be disregarded, and in this connection the following case is of interest, though here one cannot with certainty exclude a non-microbic process persisting after the death of the organisms primarily responsible for the inflammation.

The patient was a young man who died of acute dilatation of the stomach occurring from other causes in the course of a systemic gonorrhœa, which had come on one month after the onset of a specific urethritis. In the hospital the patient suffered from a polyarthritis, with which was associated a pure iritis of the left eye. At the post mortem, with Professor Adami's kind permission, I removed the affected eyeball and later subjected it to microscopical examination. Careful search, however, failed to reveal in the fibro-cellular exudate, which was richly present along the border of the ciliary body and pars ciliaris retinæ, any trace of micro-organisms.

A few remarks in regard to treatment. All precautions must be taken in connection with every case of conjunctivitis associated with gonorrhœa, until a diagnosis has been firmly established by means of the microscope, or at least strong clinical evidence. Metastatic inflammation of the conjunctiva, as before stated, runs always a favorable course and demands the simplest methods. Iritis calls for the use of atropine and not after days, but at once.

ARTICLES CONSULTED.

McKenzie, Diseases of the Eye, 3rd edition, 1840; Fournier, " Blenorrhagie," Nouveau Dictionnaire de Méd. et Chir. Pratiques, Vol. V., p. 239, 1866; Lipski, Des complications oculaires metastatique de la Blenorrhagie, Thèse de Paris, 1895; Axenfeld, Ergebnisse der allegeimeinen Pathologie des Menschen und der Tiere, von Lubarsch u. Ostertag, 1898; Garrod, "Gonorrhœal Rheumatism," Allbutt's System, Vol. III., p. 64; Gielen, "Uber gutartige, doppelseitige Conjunctivitis nach Affektionen der Urethra, Inaugural Dissertation, Bonn, 1897; Lawford and others, Discussion on the relation of gonnorrhœa (apart from direct contagion) to diseases of the eye, British Medical Association, Cheltenham, 1901, American Journ. of Ophthalmology, Dec., 1901; Groenouw, " Metastatische Ophthalmie," Graefe u. Saemisch, Handbuch der gesamten Augenheilkunde, 1901.

ECTOPIC GESTATION; CONSIDERED CLINICALLY.*

BY

F. A. L. LOCKHART, M.B. and C.M., Edin., M.D., McGill.

Gynæcologist to the Montreal General Hospital and Protestant Hospital for the Insane, Verdun ; Lecturer in Gynæcology, McGill University.

The source of origin of ectopic gestation has been carefully sought for during many years and appears likely to afford a field for controversy for some time to come, as it cannot be decided until we know where the ovum becomes impregnated and what is the nature of the site required for its implantation and growth, whether impregnation occurs in the uterus, tube or ovary, and whether or not it requires a healthy mucosa or a surface more or less completely denuded of this membrane for its location.

In Reed's[1] text book, we are told that we can certainly put inflammation out of the question and Sutton and Giles[2] tell us " that a healthy Fallopian tube is more likely to become gravid than one which has been inflamed." On the other hand, Kustner[3] claims inflammation to be the sole cause, while in 1893 Von Schrenk[3] traced the cause in 93 out of 610 cases and found that of these 70 per cent. were due to inflammation and that in the other 30 per cent. some abnormality of the tube or ovary was present.

In 1896, Schauta[3] found that, in 9 out of 43 cases, gonorrhœa had been present and Wyder found perimetric adhesions in 6 cases.

The fact is that we so rarely see a specimen until the anatomical relations of the parts have become so distorted by stretching, rupture and hæmorrhage, and the history of previous attacks of venereal disease is so very difficult to obtain, it is almost impossible to arrive at a conclusion regarding the cause. It is more than probable, however, that a previous inflammatory attack at least renders a woman more liable to the trouble than where the parts have always been healthy.

The symptoms of an unruptured ectopic gestation are as a rule so slight and vague that the patient rarely seeks medical advice. There may or may not be one or more periods of amenorrhœa, or one period may have just been finished when a slight dribbling of blood occurs, with perhaps shreds or pieces of membrane, and is accompanied by dull pain in one iliac region, together with more or less nausea or perhaps actual emesis. On making a pelvic examination of this patient a small ovoid mass is to be felt to one side of the uterus, probably at some little distance from and connected with by a soft rounded band, the proximal part of the tube. This mass is rather soft and boggy, not tense and resistant as in the case of a cystic ovary, and is not tender. These symptoms may go on for two or three months and then subside, the ovum having died, or in rare instances the woman may go to full term with every sign and symptom of a regular uterine pregnancy. Sinclair records a case where the patient went to the sixth month without rupture, and the following case occurred in my own practice. The patient was a multipara, aged 30, who had been married for seven years. She last menstruated on January 26th, 1901. In March, she began to have headache and morning sickness, both continuing until early in June. The breasts became full and tender, and she thought that she had a normal pregnancy. On the night of July 3rd, *i.e.*, after about six months' absence of menstruation, while in bed, she was seized with severe pain in the epigastrium and began to vomit. This continued throughout the night and between five and ten a.m. she had a chill and three fainting spells, the room appearing to her quite dark. When first seen she was in a state of collapse with rapid, weak pulse, pallor and cold extremities. On making a bimanual examination, the cervix exhibited the usual softness of pregnancy with patulous os. Occupying the middle line and directly continuous with the cervix a rounded mass of the size, shape and consistence of a five months' pregant uterus could be felt. It was mobile and not sensitive. Interference was postponed, and during the afternoon, rhythmic pains, closely resembling those of labour, began and continued until she was removed to hospital late at night. As she was in a very bad condition and everything pointed to a threatened miscarriage with possibly some abdominal condition, it was decided to empty the uterus and then to open the abdomen. This was heroic treatment I acknowledge, but we were misled in our diagnosis by, first, everything pointing so distinctly to intra-uterine pregnancy, and, secondly, by the fact that just before retiring on the night of July 3rd, she drank a large quantity of ice water while very warm. On exploring the uterus we found it to be but slightly enlarged, empty, and lying embedded in the above mentioned mass. The diagnosis of a ruptured ectopic gestation was now easy, and on opening the abdomen, a ruptured tube, from which had escaped a five month's fœtus with its membranes, was removed. The patient made an uninterrupted recovery. This case was very instructive as showing how a normal pregnancy can be closely simulated by one of the most dangerous affections from which woman can suffer, and is a strong argument in favour of making a most careful examination of all supposedly pregnant women as soon as they place themselves under one's care.

---

* Read before the Canadian Medical Association, Montreal, Sept. 17, 1902.

As I have previously stated, it is seldom that a case goes as far as this before showing an unmistakable danger signal. Usually between the 6th and 12th weeks of gestation, the patient is seized with an agonizingly sharp pain in the affected side accompanied by more or less profound collapse, the pulse becoming rapid, small and weak, and the face blanched, with sighing respirations. Vision is affected, everything appearing to be blurred and indistinct. A feeling of tenesmus may be experienced and micturition may be interfered with to such an extent that the patient is unable to empty her bladder. On making an examination of the pelvis and lower abdomen, the cervix will be found to be soft and the os slightly patulous, the uterus somewhat enlarged and pushed to one side by a small mass which can be vaguely felt by the examining finger. Often there will be noticed a rigidity of the abdominal wall over the diseased area, but this is not quite so constantly present as in a case of pyosalpinx.

Grandin[4] of New York thinks that where much blood has been extravasated one can feel that the temperature is higher over the part containing the blood than over the rest of the abdomen. If this observation is correct, it will prove of great value in assisting in the diagnosis of intra-abdominal hæmorrhage, but, personally, I have never been able to notice this sign.

It must be remembered that neither the presence of normal menstruation nor the absence of a discharge of blood from the uterus must be regarded as an absolute sign that the case is not one of ectopic gestation. In many cases there is absolute regularity of the menstrual flow in every way, and, while in the majority of cases, there is the dribbling of blood above mentioned, there are numerous instances where the first sign of trouble has been the sharp acute pain of either rupture of the gestation-sac or else of a tubal-abortion, *i.e.*, the expulsion of the ovum into the general peritoneal cavity from the open fimbriated end of the tube. Tubal-abortion can, of course, only occur in the earlier months when the ovum is implanted near the outer end of the tube, which has not as yet been closed.

The symptoms of this condition are practically the same as those of rupture, and, just as in the intra-uterine variety, it may be either complete or incomplete, both being equally dangerous. There is, however, more tenderness over the abdomen than in the case of a ruptured sac.

A very typical case of tubal-abortion is related by Spinelly[6] of Naples. The patient, a nullipara, consulted him for pain in the lower abdomen. She believed herself to be two months pregnant, having missed two periods. The night before he saw her, coitus was followed by a sharp pain in the left iliac fossa, contractions of the vagina, bladder and rectum, and cramps in the left leg. She also had nausea and vomiting. Local examination revealed a soft cervix and an empty and everted uterus. About three centimetres to the left side of this organ was a rounded, soft, elastic tumour the size of a mandarin orange. The mass was so soft and tense that it threatened to rupture. Inspection of the vagina and cervix demonstrated the mucous membrane to have the violet tinge so common in pregnancy. Operation was advised, but was refused until later on when rupture both rendered it imperative and confirmed the diagnosis.

Although the diagnosis of a ruptured ectopic gestation is not usually a matter of great difficulty, yet there are various conditions which may simulate it. Of these the commonest are:

1. Uterine pregnancy with a threatening of abortion. Here careful palpation and the absence of signs of internal hæmorrhage will usually enable one to escape falling into an error.

2. Pus-tube which has leaked and set up localized peritonitis. Presence of temperature, excessive tenderness, history of gonorrhœa or sepsis, etc.; will aid you.

3. Tumour with twisted pedicle will give a much firmer and a more resistant mass.

4. Pelvic hæmatocele, but this is usually due to a ruptured gestation sac.

5. Pregnancy in a rudimentary horn of the uterus demands the same treatment, so that its differentiation is unnecessary.

If not interfered with, the prognosis of ectopic gestation is undoubtedly exceedingly grave. Certainly in some instances the ovum dies and either remains as a dried up mummified mass, is entirely absorbed, is discharged through the bowel, bladder, vagina, or even the anterior abdominal wall, or else becomes infected and so forms a pelvic abscess. Even where the fœtus has gone to full time, it may remain perfectly quiescent for years.

Champneys[7] reports 75 cases of ectopic gestation (including pelvic hæmatoceles) out of which 34 or 45.3 per cent. were not interfered with, all recovering; 14 were treated by vaginal incision and one sac removed per vaginam; 26 were operated on by the abdominal method, and of these 7 or 26.92 per cent. died. As such a large proportion recovered under simply rest in bed or a vaginal incision in order to empty an hæmatocele which had not resolved with sufficient rapidity, Champneys does not take such a gloomy view of ectopic gestation as I think the majority of us do. Of course his operation mortality is very large, but we must remember that he only advocates the use of the knife where the patient has been given the chance to get better without it.

Certainly my own experience is very greatly at variance with the above. Over twenty cases of ectopic gestation have passed through my hands and the only patient upon whom I was not allowed to operate died just within twenty-four hours from the time of rupture.

The treatment will vary according to circumstances. Champneys' rules are:—

1. "Cases of early, unruptured, living tubal gestation should be operated on without delay.

2. Cases of rupture into the peritoneal cavity, without diffuse hæmorrhage, should be dealt with according to circumstances;

   (*a*) If hæmorrhage still continues when they come under observation, some cases ought to be subjected to operation, taking into consideration the probability of limitation and encapsulation of the blood continuing, and the state of the patient at the time.

   (*b*) If seen after hæmorrhage has ceased, they should be treated expectantly.

3. Cases in which the blood has been encapsulated by adhesions, or by the broad ligament, should be treated expectantly.

4. Hæmatoceles which refuse to be absorbed in a reasonable time should be opened, emptied and drained."

Theoretically, these rules are excellent and to be endorsed by all conscientious gynæcologists, but practically are very difficult to follow. In regard to rule 2, sec. a, it is not well to wait too long to see if the bleeding will be arrested by nature. If you do, you will lose a very large proportion of your patients. Champneys himself admits that five out of the seven fatal cases were "possibly prejudiced by delay." One of my own two fatalities was due to this very cause; the patient entered hospital in the evening, and the operation was postponed until the next morning as she had some temperature, and her pulse was under 100 and of fair volume. She died from shock a few hours after operation.

Certainly one should remove an early, growing, unruptured tubal gestation-sac as soon as possible. Just as assuredly should one cut down upon and remove, as soon as diagnosed, a ruptured sac unless several hours have elapsed since rupture and you are confident that all hæmorrhage has ceased, in which event, one should watch the case carefully and be ready to interfere immediately upon the ovum showing any tendency to increase in size. Even if the hæmorrhage has ceased, it is better to operate at once if your patient cannot be kept under close observation. There is more risk in delay in these cases than in immediate operation, shock or no shock. This latter condition is due to a great extent to hæmorrhage, and will only be more aggravated than otherwise by the continuous loss of blood. When seen in time, this condition yields the happiest results from operation of any in the whole domain of surgery, and time and again one sees patients who are in an apparently hopeless condition restored to their field of usefulness as mother, wife or both, by bold and prompt surgical interference.

The immediate rupture is to be treated by placing the patient in the recumbent position with the pelvis higher than the head, the local application of ice to the lower abdomen, and the administration of a dose of morphine, say gr. $\frac{1}{4}$. The lower limbs may require to be bandaged. All stimulants are absolutely contraindicated. This treatment is simply temporizing while preparing for operation. It is an entirely different thing where the patient is not seen until some hours or days after rupture, hæmorrhage has ceased and you can keep in constant touch with her. Here, a course of treatment similar to the one advocated above will often work wonders and cause absorption of any clots which have been formed. If any stimulant is required, none but normal saline solution per rectum is indicated as it simply takes the place of the blood lost, and is less likely to be followed by a resumption of the hæmorrhage than where alcohol is used.

Having decided that operation is necessary, how are we to get at and remove the offending member ? In the first place, we will consider the question of the unruptured sac. Here I think it is not a matter of much difference whether the attack be made by the abdominal or the vaginal route, and the operator may be allowed to choose whichever method he affects. After rupture has once occurred (unless we have to deal with a small, well defined hæmatocele, which will be considered later) I think there is no doubt but that the abdominal route presents numerous advantages over the vaginal. By this route, one can reach the danger point more quickly, one can have all the room required, sight can be of more service, and the abdominal cavity can be more readily cleared of its clots. The abdominal wall can also be much more efficiently rendered sterile than the vagina.

Spinelli[6] advocates preparing the patient for an abdominal section as well as vaginal. Where there is any doubt, he performs a posterior colpotomy, so that he is enabled to explore the pelvic contents digitally. Where the abortion has been complete, he simply clears out the pouch of Douglas, but when incomplete he removes the tube through the vaginal incision. When he has diagnosed a ruptured tube through this incision, he prefers to remove it by means of an opening in the anterior abdominal wall.

This previous vaginal incision I consider to be rather a waste of time. If you have excluded uterine pregnancy or hæmatocele, then the case is one of cornual pregnancy, ectopic gestation, small tumour with a twisted pedicle, or salpingitis, all of which are treated more satisfactorily by the abdominal route, which therefore should be adopted from the first, as every moment's delay in exposing and closing the rupture is of vital importance to the patient.

In the case of a pelvic hæmatocele which will not resolve under hot douching, rest, etc., the best treatment is to thoroughly incise it per vaginam, wash out the clots by means of a gently flowing stream of solution and drain. Even here, however, an abdominal section may be required owing to the removal of the clot allowing the torn vessel to re-open and so permitting a return of the hæmorrhage. In one of Champenys' cases, the mass was punctured per vaginam, apparently with a view of turning out the clots, but the condition was found to be such that the abdomen was opened at once and a gestation-sac removed. The patient died in a few hours. Again, Voituriez[8], after emptying a posterior hæmatocele, per vaginam, had to close the bleeding vessel through an abdominal incision next day as the sac had refilled with blood.

If the patient does not present herself to the doctor until the pregnancy has reached the seventh or eighth month, and everything is progressing satisfactorily, are we to kill the fœtus, to wait until some time after it has died, to attempt its immediate removal, or to allow it to go to full term in hopes of delivering a living child? We have no satisfactory method of causing the death of the fœtus without injuring the mother. Formerly, compression of the abdomen, the injection of drugs into the sac, electricity, even syphilizing the patient were tried, but thanks to the brilliant advances made in surgical technique, we can now decide upon allowing the gestation to proceed to full term (if it will) and then to have our efforts rewarded by saving both mother and child.

Dunning[2] has collected some interesting statistics regarding the treatment of an ectopic gestation which has been allowed to arrive at maturity. Out of 25 cases where the patient was operated on while the child was alive, 15 mothers recovered and 10 died, 60 per cent. were successful, whereas out of 33 cases in which operation was deferred until after death of the fœtus, only 57.7 per cent. recovered, thus showing results in favour of operating while the fœtus is alive. Carlier et Qui[10] have also pronounced in favour of this latter proceeding. In cases coming under this category, the placenta, of course, is still functionating and is attached to the sac wall. It is better not to interfere with this on account of the hæmorrhage which is apt to be set up, but instead, to stitch the sac to the margins of the incision and pack it, thus allowing the placenta and membranes to come away piece by piece.

Some operators claim that in order to prevent a recurrence of this condition, we should sterilize the patient by removing both sets of appendages. This is a perfectly unjustifiable proceeding, one of my own operations for a ruptured ectopic gestation being followed by two normal pregnancies. The field of operation and everything brought into contact with it ought to be rendered as sterile as possible, but the patient never!

N.B.—Also published in *American Gynæcology* for October.

BIBLIOGRAPHY.

1. Reed's "Diseases of Women."
2. Sutton and Giles' "Diseases of Women."
3. Gould's "Year-Book of Medicine and Surgery," 1901.
4. Grandin—*Medical Record*, New York, April 12th, 1902.
5. Pichevin—*Semaine Gyn.*, April 22nd, 1902.
6. Spinelli—*Fa Gyna*, Feb., 1902.
7. Champneys—*Jour. of Gyn. and Obstet. of the Brit. Empire*, June, 1902.
8. Voituriez—*Jour. des science Médical de Lille*, Feb. 1st, 1902.
9. Dunning—*Jour. of Obstet.*, November, 1899.
10 Carlier et Qui—*L'Echo Médical du Nord*, February 16th, 1902.

A CASE OF PURPURA WITH RECURRENT ATTACKS.*

BY

W. F. Hamilton, M.D.,

Lecturer in Clinical Medicine, McGill University: Assistant Physician, Royal Victoria Hospital, Montreal.

The patient concerning whom this report is written is eleven years of age and first came under observation when five years old.

Her family history is not available since she has been in one of the benevolent institutions since earliest childhood.

During the past six years she has been the subject of fully six attacks of purpura, all well marked though presenting considerable variation. Besides these pronounced attacks her skin has often showed numerous purpuric spots here and there upon it.

In 1896, when her case first attracted my attention, the attacks were not so severe as more recently. She would be pale and listless for a few days, decline to take her food heartily and suffer from headache. At such times purpuric areas, variable in size from petechiæ to those as large as the child's hand, would appear over limbs and body. There were no signs of visceral complication and the eruption was not raised above the surrounding skin. The larger purpuric areas would feel thicker and firmer than the flesh not so affected. During her stay in hospital on this occasion she took whooping cough and remained several months under hospital care. She had several rather peculiar rises of temperature, lasting for four or five days and accompanied by signs of bronchitis. A severe epistaxis requiring plugging occurred while in the hospital.

In April, 1899, many of the children in the institution came down with measles and she was affected at the same time. The eruption, while showing the typical features of measles, largely took on a purpuric character in this case, while no other case showed such a tendency.

In November of the same year, she had an attack of purpura quite different to any yet experienced. She came into the hospital complaining of hæmorrhage from the bowels. For two days or so before coming to the hospital she had felt pains over the stomach and abdomen, and on the day of admission blood was passed per rectum. A few blood-stained stools were passed during the next few days. At no time did we find evidence of a large quantity of blood in the stool. Petechiæ covered the body, arms and especially the legs. Upon the legs there were several large spots varying from the size of that of a ten cent piece, of dark brown colour and a few almost black. From the middle of the dorsum of the left foot to the toes, a large irregular purpuric spot was noted, varying in colour from a blue to a yellowish-brown. The gums at their margins showed signs of hæmorrhage. The abdomen was somewhat full, but was not tender. The spleen was not palpable. The urine was hæmorrhagic at first. The patient had bronchitis, presenting the usual physical signs of that disease; occasionally the sputum was blood stained. After being in the hospital for two weeks, she suffered one night from severe pain in the left side below the costal margin, and it was feared that another severe intestinal crisis was at hand. It was not followed, however, by any signs of hæmorrhage or pneumonia. The bronchial condition improved, the urine cleared, no further hæmorrhage took place from the bowels, and beyond a few small fresh spots on the skin, this attack passed off without further event.

---

* Read before the Montreal Medico-Chirurgical Society, October 17, 1902.

She was discharged on December 14, 1899, and again came for treatment on the 17th of the following March, after three months. The "spots upon the skin" appeared very suddenly with itching. There were no premonitions. The eruption at this time was quite different to that observed during the previous attacks. It was distributed over face, neck, trunk and upper extremities. While petechiæ beset the skin of these parts, the most striking feature of the eruption was the urticarial-like nodes of variable size. They were sharply defined, hard, centrally of a deep red colour and distinctly elevated. When they first appeared the central portion was white, the periphery bright red, hyperæmic. Later the central portion became of a dark red and was covered with a scab, while peripherally the affected area became darker in colour, and to the feel infiltrated. These urticarial-like nodes or areas varied as to size and colour. As time passed on it was interesting to note the changes of colour seen in these areas. The central portion became much darker, the surrounding area lighter in colour, and here were seen numerous small punctate spots, as if numerous hæmorrhages made up the peripheral zone. The hardness disappeared with the gradual change of colour similar to that seen in contusions. There were no visceral signs in this attack and the urine was free from albumin.

Purpuric spots have come out from time to time upon the patient since March, 1900, but she has not been in bed on that account. In September, 1902, she was seen with these spots upon her and what you see to-night remains from this attack. There are several points which may be interesting to note.

(1) There has always been a tendency for a slight bruise to be followed by marks. (2) The eruption has been purpuric and macular and for the most part petechial. Annular forms have been seen as well as nodular forms. (3) There have been skin and mucous membrane hæmorrhages—gums, buccal mucous membrane, bladder and bowel. (4) When she had measles an hæmorrhagic eruption was present. (5) Bronchitis has been observed several times. (6) Blood cultures taken on three occasions were negative, while the hæmoglobin richness in 1900, was 75 per cent. (8) Recurrence is a marked feature of the case. (9) There have been no joint symptoms. (10) The heart shows no signs of disease.

The classification of this case presents some difficulty. If it were possible to isolate the attacks, we might might say that we have had good examples of simple purpura, purpura hæmorrhagica and Henoch's purpura. Indeed, it seems that one lesson at least is taught by this history, *viz.*, that a little more or less of the same determining cause of purpura induces a grave or mild attack, a subcutaneous hæmorrhage or a subcutaneous discolouration, or both of these greatly accentuated.

SEMI-AUTO-ETHERIZATION.

A DEMONSTRATION TO MEMBERS OF THE CANADIAN MEDICAL ASSOCIATION OF AN IMPROVED METHOD OF INDUCING ETHER ANÆSTHESIA FOR SHORT OPERATIONS, AT THE ROYAL VICTORIA HOSPITAL, SEPTEMBER, 1902.

BY

F. BULLER, M.D.

The opponents of ether as a general anæsthetic pretend that the difficulties and unpleasant things liable to happen during its administration and afterwards are serious objections to its use. I purpose showing that all the objectionable features can be eliminated by a little care and some modification of the usual method of administration. I have practiced this modification for the past twenty-five years, always with the most satisfactory results and hope that others may be induced to try the same plan, and so greatly add to the safety and comfort of their patients—at least in all short operations requiring general anæsthesia such as are of frequent occurrence in the various branches of surgery.

The objections commonly urged against ether are :—

1. It is disagreeable to the patient.
2. It is a time-consuming anæsthetic as compared with others.
3. It induces excessive secretion of mucus with all its disagreeable consequences.
4. That patients taking it are apt to struggle and become violent.
5. It is apt to cause excessive cyanosis and to induce so much congestion of the cerebral circulation that it becomes under certain circumstances positively dangerous.
6. It is liable to be attended or followed by severe vomiting and great distress if not danger to the patient.

These are the chief points raised by those who argue against the use of ether as an anæsthetic. I now hope to show you that ether can be administered without causing appreciable discomfort; that two or three minutes is all the time required to induce anæsthesia; that the excessive secretion of mucus can be avoided; that the patient does not struggle or become violent or cyanosed, nor excessively congested about the head and face, nor is there vomiting or distress of any kind as an after-effect; moreover, the quantity of ether used for an adult does not ordinarily exceed one or two ounces for minor operations.

I wish first to call attention to some of the differences between chloroform and ether as anæsthetics. In regard to the first it is generally conceded that it cannot be administered safely excepting when the patient is in an approximately recumbent position, and that its chief danger lies in a tendency to depression of the heart's action. In this latter respect ether is the antithesis of chloroform and is actually used in certain cases of emergency as a prompt and energetic cardiac stimulant. For this reason you will readily understand there is no indication, and no valid reason, for making the patient lie down when inhaling it; on the contrary the position may and actually should be, as regards the body, perfectly erect, such as the sitting posture in an ordinary chair, and this is the position I always select when administering ether for short operations. This gets rid of the troublesome mucus in the throat and places the respiratory system in a normal condition and in a position in which there is always a tendency to assume where difficulty in breathing is experienced. Hence there is no struggling, no cyanosis, and very little of any congestion of the head and face.

The second feature of my method, if I may be allowed to call it so, is the care taken to secure the patient's co-operation. I use as an inhaler, a truncate leather cone, with some cotton wool inside and an ordinary towel folded transversely, and the square thus formed stuffed at the centre into the cone, the peripheral portions being wrapped around the same and held by an elastic band. Into the clean cavity thus formed a sufficient quantity of ether is poured, say 1½ or 2 ounces for an ordinary adult, and the patient sitting in the chair is directed to hold the inhaler over the mouth and nose as closely as possible, with permission to withdraw it if the sensation is too "choky"; with positive assurance that it is perfectly safe, and a little encouragement, the patient will in a few moments continue to take full inspirations until consciousness is lost. When the hands drop and the breathing is heavy and regular, a short operation can at once be performed without pain, and in a minute or so the patient is awake and feeling as well as ever.

If more profound anæsthesia is required the cone is simply held in place until anæsthesia is complete and passes beyond the stage of struggling which occurs when ether is administered in the ordinary way, but which is eliminated more or less completely by auto-administration in the sitting posture.

I use the same method when complete and prolonged anæsthesia is required. The patient, of course, being laid down when sufficiently under the anæsthetic to remain quiet. I have so far never met with an adult patient who could not be readily managed in this way, and I have never had the slightest unpleasant experience with ether thus administered. Time and again patients have come to me saying they could not take ether, and often their doctor has told them they must not take an anæsthetic on this account; others have suffered so much in taking ether that they could never make up their minds to go through it again. To such persons I say, "that which I am going to give is the best thing in the world for a weak heart, you need have no fear on that account. You take it yourself and stop at once if you find it disagreeable." Needless to say they never do stop.

The cause of all the fear of ether is the unnecessary discomfort, associated with the manner in which it is administered, and the thoughtlessness of medical men who do not recognize radical differences between the action of ether and chloroform, forgetting that ether is a cardiac stimulant and not a depressant as is chloroform and some other similar anæsthetics.

Ether was administered to two patients before the members of the Association and in each case a short operation performed. The demonstration perfectly illustrated all that was claimed for this method of etherization.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Paratyphoid Fever.

COLEMAN and BUXTON. "Paratyphoid Infections." *Amer. Jour. Med. Sci., June, 1902.*

JOHNSTON, WM. B. "Paratyphoid Fever; Report of Four Cases; Analysis of all reported Cases." *Ibid, August, 1902.*

HEWLETT, A. W. "Report of a case of Paratyphoid Fever." *Ibid.*

LONGCOPE, W. T. "A case of Paracolon Infection." *Ibid.*

GRUNBAUM, A. S. "A Preliminary Suggestion for the more Systematic Study of Typho-Coloid Fever." *Brit. Med. Jour., Sept. 20, 1902.*

The interest awakened in the study of the reaction of other micro-organisms by the discovery and adoption of what is known as the Widal reaction in typhoid fever, has resulted in a demonstration of new forms of infection, presenting a case-picture scarcely distinguishable from that due to the bacillus typhosus. In reviewing any considerable number of cases classed as typhoid fever in the different centres where the serum reaction has been faithfully done, one may find a small percentage in which the reaction above noted is constantly negative, and yet there appears no other reason for changing the diagnosis. Careful bacteriological study of a few of these cases has shown that they are due to an infection with an organism, a bacillus intermediate between the bacillus typhosus and bacillus coli. Widal, who first accurately described this organism, called it the bacillus paracoli. Schottmüller substituted the name paratyphoid bacillus and suggested the term paratyphoid fever to designate those cases where such an infection seemed to be the cause of the fever. Grunbaum, altering the terminology somewhat, prefers the term typho-coloid applied to such conditions. However the terms may differ, all observers seem looking in the same direction and quite unanimous in the opinion that there is a disease in almost all clinical effects like typhoid fever, and caused by organisms intermediate in character between the typhoid bacillus and the colon bacillus.

The following table with slight modifications has been copied and serves to show in the main how closely the bacteriology in two cases studied by Johnston conforms to that of typical typhoid, and how the organism found resembles the bacterium coli.

(1) Morphology, motility and staining (no attempt to
stain flagellæ). . . . . .like B. typhosus.
(2) Agar plates and slants. . . . . “ “ “
(3) Gelatine stab. . . . . “ “ “
(4) Potato. . . . . “ “ “
(5) Bouillon flasks and tube. . . . . “ “ “
(6) Durham's medium. . .
(*a*) Case II. Trace of indol after seven days incubation, observed on one occasion only.
(*b*) Case I. No indol.
(*a*) Resembles B. coli slightly, (*b*) like B. typhosus.
(7) Litmus milk, like B. typhosus. In case II there was a slight alkalinity after three weeks growth, not observed again.
(8) Glucose agar. Like B. coli, large amount of gas after eight hours incubation.
(*a*) One per cent. glucose bouillon, profuse gas production.
(*b*) One per cent. lactose bouillon, no gas production.
(*c*) One per cent. saccharose bouillon, no gas production.
Like B. coli in producing gas with glucose.
Like B. typhosus in not producing gas with lactose and saccharose.

These tests were compared with those of Gwyn's in a similar case with identical results, while Cushing's bacillus " O " differs only in the early alkalization of milk. It was found on subjecting all other obtainable paratyphoid organisms to this test, that they were thus roughly divided into two very similar groups.

(*a*) No terminal alkalinity, or a long delayed reaction.
(*b*) Terminal alkalinity in two or three weeks.

This grouping, however, from another consideration appears to be of little significance. Further into the bacteriology of these cases we need not go more than to say, that it seems that the paratyphoid bacilli differ from the B. typhosus, B. coli and B. dysenteriæ, and they are closely related to that group of organisms of which B. enteritidis, B. psittacosis, B. morbificans bovis and B. of hog cholera, are members.

It is thought by some, however, that one day these intermediate bacilli will be found pathogenetically identical.

Clinical Features of Cases already reported.

According to Johnston (August, 1902) there are in all 26 cases of paratyphoid fever recorded. We may say that about thirty have been studied and reported upon up to this date. Among the earliest cases are those of Achard and Bensaude, reported in 1896, that of Gwyn, observed in 1897, of Cushing in 1898, and those of Schottmüller in 1900 and 1901. Several have been reported in 1900 and 1901 and 1902, both in the old and new world.

Longcope remarks in his paper upon the subject of paracolon infection, that "from a study of the cases so far reported it is evident that they represent practically the same affection caused by a bacillus or group of bacilli, which differ materially from both the colon and typhoid groups, but have a close relationship to the enteritiditis group. The clinical symptoms are those of a mild typhoid fever infection, or more often of typhoid fever. In fact it is frequently impossible on clinical grounds alone to distinguish them from the latter disease. The general malaise, diarrhœa and temperature curve, together with the enlargement of the spleen, rose spots and diazo reaction, form groups of symptoms and signs which would under ordinary circumstances render the diagnosis from typhoid fever impossible. Relapses may occur, and even the complications are those common to typhoid fever."

There seems to be no necessity after this comprehensive paragraph to enter into the details of many of the case reports presented. Several points of interest, however, remain to be touched upon.

(1) Herpetic eruption was noticed in two of the reported cases.

(2) There is satisfactory proof of a double infection with both typhoid and paratyphoid bacillus.

(3) The Widal Gruber reaction is not present in the paratyphoid, but may be present where a double infection occurs.

(4) The disease has proved fatal in two cases, which do not afford sufficient material to draw broad conclusions regarding the pathology, but as far post mortem lesions were wanting in the intestines, lymph glands and spleen.

(5) A chill ushers in the febrile state, while critical termination of the temperature was found in three cases. Sixty-two per cent. of cases had diarrhœa.

(6) The sera of patients having this infection do not agglutinate typhoid bacilli in any but the lower dilutions and often not in these, while they agglutinate the organism with which the patient is infected.

(7) In cultures from blood, urine and fæces an intermediate bacillus has been isolated.

Grunbaum suggests that in those cases where a negative reaction is found with the B. typhosus that,

(*a*) The reaction should be tried on bacilli of the intermediate group.

(*b*) Examine the blood, urine and fæces for bacilli of this group.

(*c*) Blood counts especially for leucocytes are recommended.

(*d*) Test the urine for the diazo reaction.

W. F. Hamilton.

How to Recognise Tubercular Changes in the Apices of the Lungs by Percussion.

HENRY E. STADLINGER, M.D. "How to recognize Tubercular Changes in the Apices of the Lungs by Percussion." *Phila. Med. Jour., Sept. 13, 1902.*

The writer believes that an earlier diagnosis can be arrived at by carefully mapping and comparing the resonant areas at the apices of the lungs.

The respiratory mobility of the bases is first determined, the position of full inspiration and expiration being marked with a pencil. The greater the mobility the less are the chances of apical involvement.

If a difference in pitch is present at the apices it is unnecessary to go further. If, however, no difference is detected, the apex resonance is mapped out in the following way. The inner border line of the apex is mapped out from the sterno-clavicular joint over the root of the neck to the back, and the outer border of lung resonance is then mapped out, starting in the supraclavicular space and passing back to the scapular region. A comparison of the distance between the inner and outer border of lung resonance shows a diminution on the affected side, and this in the absence of any difference by the ordinary method of percussion. It is often possible to distinguish in which portion of the apex the pathological process is situated.

The directions are rendered clear by explanatory figures.

The Relations of Diabetes Mellitus to Lesions of the Pancreas.

OPIE. "On the relations of Chronic Interstitial Pancreatitis to the Islands of Langerhans and to Diabetes Mellitus." *Jour. of Exper. Med., Vol. 15, parts 4, 5.*

The opinion that disease of the pancreas plays an important part in the production of diabetes has long been gaining ground.

Minkowsky and VonMering proved that a rapidly fatal form of diabetes develops in dogs after extirpation of the pancreas, and in a case of Bull's diabetes developed after the surgical removal of the organ in man. If a small portion of the organ is left diabetes does not develop. The inference is that the pancreas has an internal secretion, poured into the blood, and probably of the nature of a ferment, which serves to convert free sugar into glycogen.

Morbid changes have been frequently observed at autopsies in cases of diabetes, according to some writers in as many as 50 per cent. of cases. On the other hand morbid changes of a very marked character, such as cancer, cirrhosis, obstruction of the ducts or acute pancreatitis may all occur without diabetes. These apparently conflicting statements have been harmonized by Opie's observations.

This observer points out that the gland is made up of two distinct portions. In addition to the ordinary glandular substance, whose secretion is poured into the bowel, there are small islets of tissue, not communicating with the duct, but surrounded by a rich vascular network, and known by the name of their discoverer as the Islets of Langerhans. These islets may escape injury even in extensive lesions of the pancreas, and in such cases there is no diabetes. When, however, they undergo degenerative changes diabetes results. This discovery affords a rational explanation of the presence or absence of diabetes in pancreatic disease, and dissipates the apparent discrepancy which has hitherto existed. It is a fair inference that the internal secretion of the glands as furnished by the cells of Langerhan's islands.

Another very interesting development in connection with pancreatic diabetes has been established by Herter and Richards. It has been shown by several observers that the subcutaneous injection of the active principles of the suprarenal glands capsules is followed by glycosuria. Herter found that the intraperitoneal application of adrenalin was followed by larger amounts of sugar in the urine than when administered in other ways. He further showed that adrenalin pencilled on the surface of the pancreas produced glycosuria, whilst similar applications to the liver or kidney were negative. Similar experiments carried on with reducing agents, such as carbonic oxide or sulphurous acid, were also shown to produce glycosuria when applied directly to the surface of the pancreas. As adrenalin is a reducing agent, the production of sugar would appear to follow the action of any reducing agent applied directly to the gland.

F. G. Finley.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Reduction of Shoulder Dislocations without an Anæsthetic.

Roloff. "Ueber Manuelle Reposition von Luxationen ohne Narkose." *Centralb. f. Chirurgie, April 10, 1902.*

After drawing attention to the investigations of Stimson and Hofmeister, Roloff remarks that painless reduction of dislocations without the use of an anæsthetic would be a great step in advance of the older methods. He reports eight cases of subcoracoid dislocation reduced without pain and without anæsthesia by simple gentle extension and manipulation. The same result was obtained in one case of subspinous dislocation.

The patient is placed upon his back on the floor. The hand of the dislocated arm is grasped and slowly extended. The force is very gradually increased, but always gently and never to the extent of causing pain. At the same time the arm is gradually abducted until it is nearly vertical, the long axis of the arm and of the body becoming nearly parallel. This motion is carried out so gently and quietly that the patient feels little or no pain. The head of the humerus is now opposite the glenoid fossa. The head is now supported, while the arm is slowly brought back to the side and the reduction is complete. If the surgeon has no skilled assistant the extension can be carried out by a layman, while he (the surgeon) gives his attention to the support of the head. The patient ceases to complain of pain as soon as gentle extension is begun. It is important that the manipulations be continuous and that no false motions be made, and that useless manipulations be avoided. By engaging the patient in conversation the muscle relaxation is greater. The time occupied was from three to thirteen minutes.

In three other cases the method failed. In two it was thought that the manipulations were not carried out with sufficient patience and care. In the third forcible reduction without anæsthesia had previously failed.

The same method was successfully adopted in two cases of backward dislocation of the forearm. Slowly and gently the arm was extended until a condition of hyperextension was obtained, and then the forearm was slowly flexed at the same time the olecranon being pushed forward.

Reduction was accomplished in one case in three and in one in ten minutes.

Diversion of the Blood from the Portal Vein into the Vena Cava.

Tansini. "Ableitung des Portalen Blutes durch die direkte Verbindung der V. portæ mit der V. cava; Neues operatives Verfahren." *Ibid, Sept. 6, 1902.*

The success which has followed upon the adoption of the suggestion of Talma of Utrecht to produce an anastomosis between the portal and systemic veins for the relief of ascites due to cirrhosis of the liver, has been considerable. According to Elliott about 50 per cent. of the reported cases have been relieved. The technique is to open the abdomen and by friction over the liver, spleen, omentum and parietal peritoneum to cause an adhesive inflammation to ensue. Morrison has shown by an autopsy on a patient dying two years after operation, that there are formed in the omental adhesions new vessels which may reach the size of the normal radial arteries.

Tansini now proposes to divert the portal blood directly into the vena cava. The experiment has been made in his laboratory. Ten dogs have been operated upon and in seven instances the experiment was successful. He performs a termino-lateral anastomosis in the following way:—The portal vein and a portion of the vena cava are isolated. The blood stream is temporarily arrested by one rubber band around the portal vein and two around the vena cava. The portal vein is then tied at the hilus of the liver and cut across. A slit is then made in the vena cava, or still better a spindle-shaped piece removed from the wall. The divided end of the portal vein is then united to the edges of the opening in the vena cava by silk sutures and the temporary ligatures removed. The dogs were fed well with meat and bones, and remained well and in good condition until killed. One of them was allowed to live two and one-half months after operation and was then in the best of health.

Ophthalmology.

UNDER THE CHARGE OF FRANK BULLER

Eye Symptoms in Extra-ocular Disease.

G. F. SUKER. "Chlorosis and its relation to the Eye." *Medicine, May, 1902.*

W. R. GOWERS. "Myasthenia and Ophthalmoplegia." *B. M. Journal, May 24, 1902.*

H. DOUGLAS SINGER. "Influence of Age upon the incidence of Optic Neuritis in cases of Intracranial Tumours." *Lancet, June 14, 1902.*

GUILBERT. "Unilateral Exophthalmos in Basedow's Disease." *La Clinique Ophthalmologique, May 10, 1902.*

TROUSSEAU. "Unilateral Exophthalmos in Basedow's Disease." *Ibid, April 10, 1902.*

BAGNERIS. "Paralysis of Accommodation following Mumps." *Ibid, June 10, 1902.*

JACQUEAU. "Amblyopias of Hepatic Origin." *Ibid, June 10, 1902.*

Dr. Suker's conclusions are as follow:—That chlorosis does cause optic atrophy, papillo-retinitis and foci of fatty degeneration closely resembling albuminuric retinitis. Double optic atrophy in chlorosis may closely simulate brain tumour. Headaches due to refraction errors and asthenopia are greatly exaggerated by chlorosis. Arterial and venous pulse in the retinal vessels are indicative of the severity of the disease. The fundus lesions are due to an autotoxæmia. The prognosis is favourable except when optic atrophy has supervened.

Gowers' cases of myasthenia all showed weakness of limbs, moderate fatigue of muscles supplying the bulb, ptosis and weakness of the remaining ocular muscles and of many supplied by the seventh nerve, especially the zygomatic muscles. These symptoms remained unaltered.

From an analysis of eighty-eight cases of intracranial tumours, Singer arrives at the conclusion that the presence of optic neuritis in intracranial tumours, excluding those occurring in the pons, is rare in patients under forty years of age, but rapidly increases in frequency after that age. This result may be found to have an important bearing on the mode of origin of optic neuritis, in that it would appear *prima facie*, to be in some way dependent for its existence upon the healthy condition of the vessel walls.

Guilbert's case of Basedow's disease exhibited well marked symptoms in the left eye, with moderate goitre, but no tachycardia. Trosseau reports three cass all typical, but with monocular symptoms.

Bagneris describes a rather interesting sequela of mumps, in the condition of paralysis of accommodation occurring in a fifteen year old child three weeks after the mumps and lasting only a short time.

Jacqueau considers the visual complications of hepatic origin to be twofold; the first being hemeralopia, and the second and rarer type being amblyopia with or without central scotoma. The symptoms are the result of the toxic action of the retained products. He advocates the exhibition of sheep liver which Trantas has found to be successful in hemeralopia.

Ocular Therapeutics.

HASKET DERBY. "Optic Atrophy and its treatment by the Subcutaneous Injection of Strychnine." *Boston M. and S. Journal, May, 15, 1902.*

EDWARD JACKSON. "Trikresol as an Antiseptic in Ophthalmic Practice." *Ophthalmic Review, June, 1902.*

F. R. VON ARLT. "The Use of Citrate of Copper in Trachoma." *Central f. prakt. Augenheil, May, 1902.*

KOSTER. "Injection of Sterilized Air into the Anterior Chamber for Tuberculosis of the Iris and Cornea." *Klin. Monatts. f. Augenheil, April, 1902.*

H. SCHMIDT. "Panophthalmitis cured by the introduction of Iodoform into the Eye." *Zeitsch. f. Augenheil, April, 1902.*

HAAB. "Action of Iodoform inside the Eyeball." *Corr. Blatt. f. Schweizer Aerzt., 1902, No. 8.*

A. H. BENSON. "Note on the value of Fluorescin Test." *Ophthal. Review, 1902.*

THEOBALD. "Carbolic Acid as a substitute for the Cautery in the Treatment of Corneal Ulcers." *Amer. Jour. Med. Sciences, June, 1902.*

Hasket Derby, in urging the use of strychnine in cases of optic atrophy, does not overlook the gloomy prognosis of this disease, but considers that the slightest chance of relief should be seized upon and used to its utmost limit. The strychnine is always injected in the temple, beginning with .04 gramme and increasing by .01 gramme daily, or until constitutional effects appear, which do so generally by the tenth dose. An interval of ten days is then allowed to elapse and the treatment repeated, and sometimes a third course is given. I certain cases of advancing atrophy the injections seem to stay the course of the disease, but whether permanently remains to be seen.

Dr. Jackson lauds trikresol in a solution of 1 to 1,000 as an ideal antiseptic for ophthalmic practice. It is used as a lotion, as a basis for cocaine solutions, etc., but not for homatropine or atropine where repeated frequent instillations are required and the slight smarting caused by the trikresol would be objectionable. It is also an admirable bath for instruments after they have been sterilized.

Von Arlt uses citrate of copper in ointment from 5 to 10 per cent. in strength in cases of trachoma. It is applied two or three times daily. Corneal ulcers and the exhibition of iodide of potash forbid its use.

Koster's results in tuberculosis of the iris and cornea seem almost too good. He withdraws a little aqueous from the anterior chamber and then injects sterilized air. Improvement rapidly sets in and continues. The injections were repeated from four to five times in the three cases cited.

Schmidt's case of panophthalmitis followed cataract extraction. Schmidt reopened the anterior chamber, evacuated the pus, and inserted an iodoform disc. Improvement was rapid and in a month the patient had one-fourth full vision with a convex lens of 10 D.

Haab reports the disappearance of iris tubercles after introducing sterilized iodoform into the anterior chamber of the eye. This result, however, lasted only until the iodoform was absorbed, when a fresh crop of tubercles appeared. Iodoform introduced into the vitreous also acted well in threatening or active traumatic inflammations.

Benson's observation on fluorescin add but little new to our knowledge of the action of the drug. He brings out the point, that not infrequently fluorescin does not stain the cornea unless cocaine has been previously instilled, which is due to the softening action of the cocaine on the corneal epithelium. It is doubtful if it stains the endothelium. It does not stain the œdematous cornea of glaucoma. The damaged ocular and palpebral conjunctivæ stain yellow. Fluorescin stains only where there is an abrasion of the cornea or where the epithelium is diseased or dead. Normal corneal epithelium on which much cocaine has been dropped will stain a mottled green, due to the softening action of the cocaine and its diminished vitality.

Theobald considers the application of pure carbolic acid to infiltrated corneal ulcers as safe and even more efficacious than the cautery. The ulcer, after instilling cocaine, is scraped clear of sloughs, etc., and then the carbolic is very carefully applied on the end of a small toothpick, after which in a few moments the eye is flushed with boric lotion and the lids allowed to close.

J. W. Stirling.

Pathology.

UNDER THE CHARGE OF J. GEORGE ADAMI.

On Bacterial Entrance and Exit.

FORD, W. W. "The Bacteriology of Healthy Organs." *Transactions of the Assoc. of American Physicians, XV., 1900, p. 389.*

BULLARD, MARGUERITE, J. "A study of the Bacterial Flora of the Intestinal Mucosa of the Normal Rabbit." *American Medicine, IV., 1902, p. 546, (Oct. 4.)*

CARMICHAEL, E. SCOTT. "The Effect of Injection of Micro-organisms into the Portal System on the Sterility of the Bile in the Gall-Bladder." *Journal of Pathology and Bacteriology, XIII., No. 3, 1902, p. 276.*

It is very human nature for investigators, working along one particular line and convinced of the correctness of their own observations, so far as they go, to fail to see the direction in which those observations are incomplete, and for those investigators to give the lie direct to the conclusions of previous observers, who, employing other and, it may be, but slightly different methods of observation, have reached divergent results. In the days when scientific studies in medicine were young, and the conditions of investigation were imperfectly understood, this was perhaps pardonable; now-a-days it is so no longer. Before giving the lie direct to any series of observations, it is essential that those observations be carefully repeated according to the directions given by the original observer, or, at least, if not repeated, that the conditions of experimentation be such as to be more accurate and more complete than those of any previous worker on the subject. It is the duty, that is to say, of anyone repeating investigations of a given order, to determine, whether, under like conditions of experimentation, results would not have been obtained confirmatory of that earlier work, or, at least, to show wherein that earlier work was incomplete; it is his duty where contradictory results have been obtained to indicate, where possible, the reasons.

If this is not done the inevitable result is confusion. The ordinary student, who merely, it may be, follows a brief abstract of the results gained by different observers, concludes that these results are absolutely contradictory, and he is apt, if he comes to any conclusion at all, to reach that conclusion either by accepting the verdict of the majority of the observers or of those among them whom he regards as the more authoritative. He does not realize that minute variations in procedure may lead to great variations in the results obtained.

I have selected two articles here reviewed in order to call attention to this unscientific mode of study of moot questions.

For long years, there has been debate concerning the presence of bacteria in the healthy body and the discharge of bacteria in the secretions. The largely received opinion has been that, in the first place, bacteria do not enter the healthy tissues or, at least, that these healthy tissues are sterile and that, if there be entry of bacteria through any portal, they are not discharged through the kidneys or liver unless there be definite lesions in those organs. Time and again, however, observations have been published, showing that these views are incorrect, only to be contradicted by other series of observations tending to re-establish the prevalent opinions.

Thus, notably in our laboratory here in McGill, Ford has shown, in contradistinction to the work of the majority of previous observers, that studying the organs of a long series of apparently healthy rabbits, guinea pigs, cats and dogs, by the employment of proper methods he was able to gain cultures from close upon 80 per cent. (80.6 per cent.) of the organs (livers and kidneys) employed by him. He pointed out, that, for this purpose, relatively large quantities of material had to be used—the whole kidney, for example—that the growths, in general, only showed themselves very slowly, indicating both that the bacteria were not present in large numbers and that apparently, they had already become attenuated and inhibited in proliferative capacity; he showed that the development of different species of bacteria in carnivorous and herbivorous species of animals, the presence of the same forms of bacteria in both kidneys and livers of individual animals and, thirdly, certain differences in the bacteriology of individual animals, all indicated clearly that the results could not be due to contamination, but must be due to the actual presence of the bacteria within the tissues at the time of killing of the individual animals. But now Miss M. Bullard would throw some doubt upon Ford's work and in all probability she will be quoted among those who have found the organs of normal healthy animals to be in general sterile.

Let us, however, study her work. She started out to determine whether a particular bacterial flora exists in the mucosa of the digestive tract of normal rabbits, and whether, in case there is such a flora, there be any relationship between it and the bacteria occasionally found in solid organs. As regards her actual experiments they would seem to have been most carefully performed. She made cultures from the mucosa of the œsophagus, stomach, duodenum, jejunum, ileum, appendix, cæcum, upper colon, lower colon and rectum. She opened these with sterilized instruments immediately after death, washed the surface of the mucosa with boiled water so as to remove organisms which might be purely due to the overlying fæces, and then scraped some of the mucosa from a small area with a sterile scalpel and transferred some of this material to each tube of the media used, employing gelatine, glucose agar and glucose broth. At the same time, she inoculated other tubes with heart blood, others again with pieces of spleen, liver and kidney, each from 0.5 to 1 cm. in diameter. She examined in this way seven rabbits and the results obtained were quite interesting. Certain forms like the Hay Bacillus, M. desidens and Sarcina alba were found in the intestinal wall of almost every animal. The mucosa of the stomach contained the smallest number of bacteria; the plates made from the cæcum and appendix and frequently the rectum contained a larger number of colonies than did those from any of the other divisions of the digestive tract. These latter observations agree fully with those obtained by Cushing in man. The mucosa of the œsophagus contained more bacteria than did those portions of the digestive tract immediately following after the stomach. But now, contrary to the results obtained by Ford, bacteria were found in the glandular organs of but two rabbits out of the seven. The organisms were identical with the species isolated from the digestive tract of the same rabbits. The cultures made from the heart blood were negative in all cases.

It will be seen that in regard to these later observations Miss Bullard does not deny that bacilli are obtainable from the organs of apparently healthy animals, she only discovers that they are present much more rarely than Ford has stated.

But let us look a little more fully into Miss Bullard's methods of procedure.

In the first place, though this, I confess, is a matter of rather minor importance, she employed only small portions of the organs. Ford laid stress on the fact that the indications were that not many living bacteria were present in a given healthy organ at a given moment and so for his investigations employed much larger portions of tissue—the whole kidney, for example. It may, however, be urged with some justice, that even a quarter of a cubic cm. of liver or kidney material should be sufficient to give positive results. A matter of more importance is that her animals were in a state of partial starvation, having been kept without food for "at least seven hours" before being killed. This fact introduces a totally new element which should certainly have been noticed by Miss Bullard in her remarks in regard to the divergence between her results and those of Ford. Ford's conclusions were that the bacilli are constantly passing (by the agency of leucocytes) from the lumen of the intestine into the blood and lymph streams and that, under normal conditions, these bacteria are as constantly being destroyed by the endothelium and cells of the different organs, etc. Now, clearly, when digestion is active, and when there is determination of blood to the intestines then there is an increased passage out of leucocytes; this increased passage has been noted by many observers occurring while digestion is in full swing. These conditions, therefore, favour the entrance of bacteria into the tissues. When, on the contrary, the digestive act is largely at a standstill, then we should expect a reduced entry of bacteria and should expect exactly what Miss Bullard finds, namely, that the internal organs become, in the majority of cases, quite sterile.

As I have pointed out elsewhere, following a suggestion of Dr. G. E. Armstrong, empirically the surgeon acts upon this principle by dieting the patient for a day or two prior to the operation, by flushing out the intestines with purgatives and by taking care not to operate soon after a meal has been given to the patient.

Miss Bullard, that is, by employing fasting animals, has introduced another factor. Her results do not contradict those of Ford; rather, they amplify them and indicate that, in the fasting animal, the entrance of bacteria into the healthy organs is materially reduced.

Long years ago, in 1882, Cohnheim suggested that in the event of general bacterial infection, the body protects itself by excreting the living germs through the kidney and liver. But very considerable doubt was thrown upon this theory by many observers, notably by Wyssokowitsch and Sherrington. The former, in a long series of observations, carried on with twelve species of bacteria which he chose because they do not ordinarily cause local lesions in the kidney, was unable, in a single instance, to gain cultures of the bacilli from the urine, whereas, in thirteen out of seventeen experiments, with species known to be liable to cause such local lesions, he found that the bacilli passed, in smaller or larger numbers, into the urine. Sherrington, in the course of a very full study, found that even when every drop of the inoculated blood was teeming with micro-organisms, there might not be the smallest transit of these into the urine or bile. Though with certain species of pathogenetic organisms, after a time, they might be found, he concluded, with the former observer, that when this occurred, the evidence was against regarding the tissues as still normal. He noted that, occasionally, bacteria might be present in the secretions when there was no detectable presence of the same in the blood. Notwithstanding, other observers have obtained diametrically opposite results. Cotton, for example, found the pyococcus aureus and the B. prodigiosus in the bile thirty minutes after inoculation; Pernice and Scagliosi after hypodermic injection of anthrax bacilli in the guinea-pig, found them in the bile in four hours; Posner and Lewin after injecting the bacillus prodigiosus into the intestines, obtained it from both the kidney substance and the urine within twenty-four hours. Biedel and Kraus found the pyococcus, the B. coli and the B. anthracis in the urine a few minutes after intravenous injection and, similarly, found the pyococcus in the bile in thirteen, in twenty and in other cases in thirty-five minutes after inoculation. Their method was employed and extended by Fütterer of Chicago, who, employing the same organisms, obtained abundant cultures from the bile within two or three minutes after inoculation into the left side of the heart. Our own observations, here in McGill*, have tended strongly to confirm these observations and to show that forms like the colon bacilli are actively taken up by the endothelial cells of the liver capillaries, are next to be recognized within the liver cells and are frequently to be obtained in a diplococcoid, and apparently attenuated form, in the bile.

This matter, concerning the passage of the bacilli into the bile, is of some little importance as helping to explain the part played by bacilli in cholelithiasis and cholecystitis. The generally accepted opinion has been that the bacilli setting up this condition, have either ascended the common bile duct from the duodenum or have reached the gall-bladder through the lymphatics. But if pathogenic bacilli can be excreted through the liver, then a much more rational etiology is indicated; rational, because, when the duodenum so frequently contains members of the colon group, and other micro-organisms which are potentially pathogenic, and when the upper part of the small intestine shows no evidences of typhoidal lesions, it is, to say the least, curious that in the cholecystitis and cholelithiasis following typhoid, we so often gain pure cultures of the typhoid baccilus from the gall-bladder or from gall stones. We should expect to find, in general, a mixed infection. On the other hand, if there be a generally infected condition of the body through the agency of the typhoid bacilli and if these become discharged through the liver, their condition in a pure or practically pure condition in the bile is easy to understand.

---

* Adami, Abbott and Nicholson, On the Diplococcoid form of the Colon Bacillus. *Jour of Expt. Medicine*, IV., 1809, p. 349, etc.

Mr. Scott Carmichael, however, concludes from his observations that Sherrington's theory is correct and lays down that "there are thus only two methods of infection of the gall-bladder; either by direct extension from the intestinal tract disease, or, by infection through the general blood stream to the cystic artery, and the observations by Sherrington tend to disprove the latter view." His observations were conducted upon eight animals, five rabbits, two guinea-pigs and one dog. He injected the colon or typhoid bacilli or streptococcus pyogenes into either the superior mesenteric or splenic vein, or in three animals direct into the gall-bladder. In the latter case, even three weeks after the injection, he was able to gain pure cultures from the bile. In the other cases, when the experiment was successful, he found the bile sterile.

But let us examine a little into his methods.

In his first experiment he employed a twenty-four hours growth of typhoid bacilli (which are not pathogenic organisms in the rabbit), and injected five minims into the superior mesenteric vein. The animal was killed four days afterwards and the bile found sterile.

The conditions here, it will be seen, by no means afford a fair test. In the first place, the amount inoculated was, under the circumstances, singularly small. Considering that he was dealing with a non-pathogenic organism, we should expect that the individual bacilli would be rapidly destroyed by the body fluids and endothelium of the liver capillaries, and, if our theory be correct, (a point which Carmichæl should have taken into consideration), if the process of excretion be a cellular one, then these results are only to be expected. In the next place, the observations of Biedel and Kraus and of Fütterer indicate that the active passage is almost immediate. These observers did not examine the bile in the gall-bladder, but first placed the cannula in the common bile duct, and after this made the intravenous injection of the bacteria and found, as already reported, that within a few minutes these organisms were to be detected in the bile passing out of the duct.

Carmichæl's cultures were only made from the gall-bladder four days later. He did not in the least, take into consideration the possibilities that, either if the bacilli passed into the gall-bladder, being only of low virulence for the rabbit they might undergo destruction through the (weak but still existent) bactericidal properties of the bile, or that, injecting such small quantities, they might be discharged by the common bile duct before ever entering the gall-bladder.

The same criticisms are to be applied to greater or less extent, to all his further experiments. He obtained certain definite results by employing certain procedures; he does not adequately take into consideration the alterations that might be brought about by employing other methods and, from his own very limited experiments, he ventures upon a wide generalization. It might be added that the paper gives evidence of a poor technique, for, three out of his eight animals died of peritonitis and so gave imperfect results; while, when he employed streptococci, he made cultures upon solid media instead of upon broth in which streptococci are very much more apt to reveal their existence, if present. In fact, throughout his paper, he leaves wholly out of account the fact that for observations of this nature, fluid cultures are preferable. As we have pointed out on more than one occasion, and as has recently been emphasized by Hildebrandt in his observations upon the presence of bacteria in the healthy lung, it is a mistake to use solid media in experiments of this nature, inasmuch as the inhibitory action of the body fluids tends to prevent the growth of bacteria which may be present in those fluids; undiluted blood and body fluids smeared on a solid surface arrest growth. The correct procedure is to inoculate the bile, blood, etc., into relatively large quantities of fluid, thereby so diluting any bactericidal substance which may be present as to minimise its inhibitory action. Obviously, observations of this order in which all the factors are not properly taken into consideration are to be deprecated. They are not merely valueless, but positively harmful.

J. G. Adami.

Reviews and Notices of Books.

A Text-Book on the Science and Art of Obstetrics. By Henry J. Garrigues, A.M., M.D., 884 pages, 504 illustrations. J. B. Lippincott Company, Philadelphia. Canadian Agent, Charles Roberts, 1524 Ontario street, Montreal.

Few writers of recent obstetric books have brought to their task a better equipment than the author of this most interesting contribution to obstetric literature.

An author and teacher of the subject for more than twenty-five years, a vast experience in both hospital and private practice, a close student and the writer of one of the most popular text-books on gynæcology, Professor Garrigues' name on the title page is sufficient to lead to high expectations on the part of the medical reader.

In his modest preface the author states that his aim has been to write a text-book and not a book of reference, and thus in a degree apologizes for the magiesterial tone used in the text.

The general management of the subject is excellent, the aim being to lead the student from the simple to the complicated. The subject is divided into two general divisions—normal and abnormal. In the first division he considers after a short general foundation, normal pregnancy, normal labour and normal puerpery. In the second division are discussed abnormal pregnancy, dystocia, obstetric operations and abnormal puerpery, while the book concludes with an excellent section: "Notes on the Diseases of New Born Children." The division into chapters is overdone, there being no less than 120.

Chapter V is very unfortunate and its matter in bad taste in a text-book for students. In future editions it should be rewritten or, better, expurgated. The chapter on the placenta is too brief and is scarcely satisfactory. The chapters dealing with the mechanism of labour, the conduct of labour, faulty presentations, deformed pelves, symphysiotomy and Cæsarean section are specially worthy of mention. The author writes a strong indictment against the employment of midwives in any civilized community. His objections are well taken and forcibly advanced. As an example of his opinion on this subject the following may be quoted :—" The institution of midwives is a remnant of barbaric times, a blot on civilization which ought to be wiped out as soon as possible. As America has led the world in establishing colleges for educating women physicians, let it also form the vanguard in a war of extermination against these pestiferous remnants of pre-antiseptic days, midwives and schools of midwifery."

We note with objection his recommendation of chlorinate of lime for hand disinfection, also the introduction of the finger into the rectum to facilitate the delivery of the head, and the use of *serres fines* for the repair of perineal lacerations. He points out the dangers and strongly objects to the employment of medullary cocainization as an anæsthetic in labour.

The author prefers the Harris method for symphysiotomy, but considers that the operation should only be entrusted to an operative gynæcologist or a general surgeon with obstetric experience.

The general style of the book is simple, clear and almost conversational. The author enters with great detail in all practical points and manifests throughout his personal observation and research. The book is easy to read and is most instructive, while being at the same time thoroughly scientific and eminently practical. It will undoubtedly be a very popular book with the general practitioner as well as with the medical student. The illustrations, most of them original, are well chosen, while the book is not padded with them as is too often the case. The publishers' work in letter press and binding is all that could be desired.

D. J. E.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 16, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Uterine Polypus.

Dr. F. A. Lockhart showed a specimen of a uterine polypus of which he gave the history in detail. The growth, which occurred in a woman aged 44 years, protruded from the vagina and on examination was seen to be attached to the fundus of the uterus. The interesting point about the case was the absence of hæmorrhage. As the woman was past the menopause the whole organ was removed.

Friedreich's Ataxia.

Dr. James Stewart showed a boy aged 15 years, with the cerebellar type of Friedreich's ataxia. The first symptom had appeared hardly more than a year before in the form of ataxia, which had steadily increased in degree, so that the boy was hardly able to walk without assistance. Both feet were deformed and the spine showed anterior and lateral curvature. Exaggeration of the knee jerks was one of the points distinguishing this case from the spinal type of the disease in which they were lost. Besides these symptoms the boy showed some disturbance of speech, paralysis of the external rectus and nystagmus. The interest of the case lay in its rarity, the only spinal symptoms being the kyphosis and scoliosis. There was no history of similar disease in the boy's family so far as could be determined.

Dr Mills showed some animals in which removal of various portions of the cerebellum had resulted in very marked inco-ordination, and discussed the function of the cerebellum as having a controlling influence on the cerebrum.

Dr. Shirres discussed the points brough out by Dr. Mills.

Myasthenia Gravis.

Dr. F. G. Finley showed a case of this disease, a full report of which appeared in the July number, page 498.

Dr. James Stewart had had a case under observation for two years, in which time three different attacks had occurred, and finally the disease seemed to be permanently arrested. The disease was very closely allied to pronounced neurasthenia, from which it was merely a difference in degree.

The Use of Hyoscine before the Administration of Ether.

Dr. E. A. Robertson contributed this paper, published in the June number.

Dr. G. G. Campbell referred to a number of drugs which had been tried with the hope of eliminating some of the unpleasant effects of ether administration, but without any success. The wonderful results obtained with hyoscine warranted a prolonged trial.

Pulmonary Œdema.

Dr. H. B. Cushing read a paper on this subject, which was discussed by Drs. Morrow, Lafleur, Hamilton, Adami and Mills.

Stated Meeting, June 6, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Enterolith.

Dr. J. Alex. Hutchison showed an enterolith having a biliary calculus as a nucleus, and read a report of the case which will be published next month.

Dr. Finley remarked on the long period of eight years which had elapsed between the biliary colic and the symptoms of intestinal obstruction, and made the suggestion that it had lain in the colon; it was difficult to see how a large stone could have passed down the small intestine without causing pain.

Dr. Armstrong looked on the suggestion that the stone had got into the colon as a very practical one. He referred to cases which he had seen, in which the gall-bladder had perforated into the colon.

Angioneurotic Œdema.

Dr. W. E. Deeks reported this case. (See July, pp. 507.)

Dr. W. F. Hamilton referred to a case of recurrent localized œdema without any apparent cause. The attacks were diminishing in frequency and severity. The relationship supposed by some to exist between asthma and angioneurotic œdema was alluded to.

Dr. Birkett related a somewhat similar case in which after severe exertion a patient, the subject of cardiac disease, had developed severe œdema of the nasal passages and trachea, the larynx escaping involvement. There was dyspnœa and cyanosis, but a hypodermic of morphine quickly relieved the condition.

Probable Hæmorrhage into the Cord followed by Symptoms of Brown-Sequard,s Paralysis.

Dr. Shirres reported this case, which was discussed by Drs. Laurin, Hamilton, Mills, Deeks and Finley.

Stated Meeting, June 27, 1902.

G. E. Armstrong, M.D., President, in the Chair.

Inflammatory Anastomosis between Gall-Bladder and Duodenum.

Dr. MacTaggart showed this specimen from a case of Dr. Armstrong's, showing anastomosis between the gall-bladder and the duodenum. At the autopsy the gall-bladder was found adherent to the duodenum, and on slitting open the duodenum a perforation of about one cm. in diameter was found. The gall-duct was pervious. Only a partial autopsy was allowed.

Dr. Armstrong said that the stone removed was as large as one-half of an average-sized banana, the circumferences being 6½ and 3½ inches. The patient was a woman of 72, giving a history of several attacks of colic recovered from in about 24 hours. The present attack began with pain, followed the second and third day by vomiting of stinking matter. The following day, when first seen by the speaker, there was considerable abdominal distension pointing to intestinal obstruction, and operation was allowed about twelve hours later. On opening the abdominal cavity, gas and fæcal matter escaped, and the large gall-stone was found lying in the intestine about a foot away from the distended coils. The perforation was found about four feet above where the stone was lying, and through this the fæcal matter had escaped. A possible explanation was that the stone had lain at the point of ulceration which it caused and by some means had later moved down.

Dr. Elder thought from the size of the stone that it was possible it was an enterolith having a gall-stone nucleus. He considered it quite impossible that one of such a size could have found its way through from the gall-bladder.

Dr. Armstrong, in reply, said he had removed a stone nearly as large as this one from the gall-bladder itself. The presence of four facets on the stone pointed to its being a gall-stone, as it must have lain against four smaller stones.

Two Cases of Sporadic Typhus Fever.

Dr. Lafleur reported these two cases, residents of Montreal, husband

and wife which had been admitted to the Montreal General Hospital. After reporting the history of the first case, Dr. Gordon Campbell gave the history of the second who had been under his care during Dr. Lafleur's absence from the city.

Dr. Kenneth Cameron had sent these patients into hospital and described their condition previous to admission.

Addison's Disease with Recovery.

Dr. Deeks reported a case of Addison's disease in which the symptoms had all disappeared on the patient taking suprarenal capsule. (See June number, p. 509).

Dr. James Stewart congratulated the reader of the report on having effected a cure. He referred to a case reported by Dr. Blackader some years previously in which suprarenal had proved beneficial, but he did not know the after history. He spoke of the difficulty of making a diagnosis of Addison's disease in acute cases, and asked Dr. Deeks if the mucous membranes had been pigmented.

Dr. Lafleur thought it might be of interest if this patient had been tested with tuberculin. He referred to a case showing all the symptoms of this disease in which tuberculin had given a positive result.

Dr. Deeks said, in reply, that he thought he had made it quite clear in his report that pigmentation was present in both mucous membranes inside the cheeks and on the lips, and it was very characteristic. While the patient had not been tested with tuberculin, she gave an exceedingly strong history of family tuberculosis.

Resume of Recent Advances in Infant Feeding.

Dr. A. D. Blackader read this paper, published in the June number of this Journal, page 491.

Dr. Evans noted three points, *viz.*, the reacknowledgment of the action of starch as a diluent favouring the digestion of proteids, the new whey mixtures, and the reaction against sterilization and pasteurization. The speaker had not had much satisfaction with starch as a diluent. Maltose, he thought, tended to produce looseness of the bowels and mucous or watery stools. Beef juice also in many cases seemed materially to disturb the digestive process.

Dr. Anderson approved of the use of cereo-gruels as tending to soften the curd of cow's milk and changing the food upon which the bacteria flourish in milk fed children. He approved of the addition of cream to the gruels as likely to help in keeping the bowels regular.

Dr. Church also was in favour of the cereo-gruels, especially in cases of constipation. He asked if the reader were opposed to the use of the ordinary food preparations.

DR. SHAW would like to know whether the dextrine, lactose or cane sugar made any difference in the amount of nitrogen eliminated. He had been using cane sugar instead of milk sugar and had found very little difference in the results obtained.

DR. BAZIN spoke of the difficulty of feeding children with any form of milk, modified or otherwise, where there was a careless mother or nurse in charge. Under such circumstances he thought it was much easier to trust the person in charge of the child to do the mixing of a certain amount of powder and water, than to keeping the milk fit for use.

DR. BLACKADER, in reply, in using the term cereo-gruel, had not referred to dextrinized gruels which might act as an irritant, and did not have the same effect in separating the curd of milk. In diarrhœa, the first and most important thing was to stop all milk for 24 hours or longer and to substitute a gruel. He did not incline to the theory that lactic acid inhibited the growth of all bacteria, though it might inhibit some of the more noxious forms. Where one could not have milk uncontaminated, it was certainly better to resort to condensed milk or some of the infant foods. He thought that the starch in very thin gruels might be digested as early as the sixth month, but not before that. He did not think we should go to extremes, every child's stomach should be tested and the food modified to suit the individual case, the test being that the child was comfortable and gaining in weight.

SIR WILLIAM HINGSTON thought that the question of beef juice not being essential to life had been settled thirty years ago. He spoke strongly against the prevailing custom, at least among the well-to-do, of too early weaning of the child.

Stated Meeting, October 3, 1902.

H. S. BIRKETT, M.D., VICE-PRESIDENT, IN THE CHAIR.

Recto-Vaginal Fistula due to Cancer of the Uterus.

DR. J. G. ADAMI showed this specimen, remarking that it was now rare to come across so well marked an example, as most cases came under care of the gynæcologists before reaching this stage. The patient was a woman of 50 or upwards, passing fæces per vaginam and with profuse diarrhœa. She did not complain of pain. At autopsy there was found a squamous cancer of the cervix uteri involving the whole organ. Ulceration had destroyed all the tissues in the neighbourhood and led to a large fistula communicating with the anterior wall of the rectum. The pelvic viscera were all matted together and the disease involved the Fallopian tubes. The case also showed congenital smallness of the left kidney, and a considerable amount of chylous ascites and left chylothorax, the nature of which has been determined by ether and the Sudan red stain. The cause of this had been found on dissection to be obstruction of the thoracic duct at the level of the fourth dorsal vertebra, by a mass of cancerous lymphatic tissue. The duct below this was almost the size of a lead pencil.

Dr. Lapthorn Smith agreed that cases of this kind were now rare because, although perhaps coming too late for cure, they were recognized and the local condition treated. The explanation of the cause of the chylous ascites was most interesting, as the frequent presence of ascites along with malignant disease of the pelvic viscera had been to him difficult of explanation. Probably many more would be found due to this cause were it sought for. The importance of recognizing these cases early was dwelt on.

Dr. Peters referred to an interesting case of entero-vaginal fistula which had come under his notice in connection with cancer of the uterus. A portion of the small bowel had come down and ulcerated through into the vagina.

Dr. Gurd asked whether this chylous fluid was easily recognized. He had a patient whom he suspected of having malignant disease, and whom he had tapped five times and the fluid withdrawn was gradually becoming darker and somewhat opaque.

Dr. Adami, in reply, said that the whole subject of ascites was a very complicated one at present. On the one hand there was the true chylous ascites, a milky fluid giving evidence of the presence of fat due to escape of chylous lymph into the peritoneal sac. In other cases there was a distinctly opalescent and moderately milky fluid (pseudo-chylous ascites) diffusing out through the walls, probably from some obstruction of the peritoneal lymphatics, through the presence of cancer of the retroperitoneal glands. With regard to Dr. Smith's remarks, it must be remembered that chylous ascites alone can be brought about by blockage of the thoracic duct.

Nephritis in Congenital Unilateral Absence of Kidney.

Dr. F. G. Finley reported this case, of which the following is a summary:

The patient, aged 36 or 37, suffered for three years from Bright's disease, but for the past six months, pain in the back and weakness forced him to give up work. On admission to the Montreal General Hospital he was found to have an advanced stage of the disease, together with a left pleurisy and soon developed uræmic symptoms. The urine was of low specific gravity and moderate quantity, showing a small amount of albumin and very few casts. There was no dropsy. Interstitial nephritis was diagnosed. At the autopsy the pleurisy was found to be tuberculous in origin, illustrating the fact that most cases of pleurisy associated with Bright's disease are tuberculous. One kidney was absent, a condition said by Morris to occur once in 2,600 cases. The hospital statistics showed three instances in 2,000 cases.

Dr. McCrae added to the report some notes of the autopsy. Death had been from acute purulent pericarditis, with left serofibrinous pleuritis and incipient lobar pneumonia. The left kidney and adrenal were absent and the ureter, a blind tube 8 cm. in length. The right kidney was small and contracted, interstitial nephritis. On microscopic examination the glomeruli were found three times their normal size. Dr. McCrae also gave the particulars of the other two cases of absence of the kidney in the hospital records, showing that in one other case there was also the same form of nephritis present. He suggested that the extra demands made upon a single kidney might be the cause of the nephritis in such cases, especially as they occurred at such a comparatively early age.

Dr. Adami said that Dr. McCrae's remarks reminded him of a case he had shown before the society a few years previously, a child of 14, with enormous hypertrophy of the heart and arterio-sclerosis. Here, too, the left kidney was absent. One could not help feeling that there was an intimate relation between the work of the heart and the size of the kidney. Renal insufficiency was the cause of cardiac hypertrophy and dilatation.

Dr. G. A. Brown asked if the patient suffered very much from pain in the left side. He had operated some years ago upon a man with this symptom and found the left kidney absent.

Dr. Finley, in reply, said that the patient had complained for two or three years of pain in the back and limbs, but never so severe as to suggest stone.

Cor Biloculare.

Dr. D. P. Anderson reported this case which presented several anomalies not usually seen in this rare form of congenital malformation. The child when born weighed six pounds and presented all the signs of a healthy infant; 33 hours after birth, marked cyanosis was noted and the extremities were cold and slightly œdematous. The pulse which had been 144 at birth became 150 to 155. Patency of the foramen ovale was looked upon as a probable explanation of the symptoms. The child's condition continued to get worse until its death, 44 hours after birth. At the partial autopsy the heart was found to consist of a single ventricle and single auricle, having but one communication. The anatomical relationships were explained by means of a diagram. Thus, there was a heart composed of two cavities only, and no evidence of any interventricular or interauricular septum. (The case with a diagram will be published in full later.)

Dr. Anderson could find no reference in the literature to any such extreme grade of this malformation and alluded to some of the reported cases.

Dr. Elder felt that if a complete autopsy had been made further malformations would have been discovered. This form of heart was common in the lower animal life.

Dr. Adami said this was a very rare condition and represented practically the state of the heart in the fish. The pulmonary arteries coming directly off the main trunk was interesting.

Dr. Anderson, in reply, said the heart had practically not developed after the fourth week or earlier.

An Unusual Case of Congenital Umbilical Hernia.

Dr. J. M. Elder showed a couple of photographs of a case of congenital hernia. The child was brought to him at the Montreal General Hospital the third day after its birth, presenting a large umbilical hernia. Over it was spread evidently the structures of the cord which had been ligated on the tumour and simply left tied there. The covering of the tumour, which was fully the size of an orange, was peritoneum and it contained fluid which apparently communicated with the peritoneal cavity. It was dull on percussion. Decomposition had set in and there was a little temperature, but beyond this there was no cause for alarm, the child's bowels having moved several times. Under chloroform the vessels of the cord at the bottom, close to the skin, were ligated and the tumour on being opened was found to contain the aorta, ascending and transverse colon, and a considerable length of small intestines. The parts were washed and irrigated and turned into the cavity of the abdomen and the opening closed as well as possible. The child was taken away to be nursed by its mother, returning to be dressed every day and made a good recovery.

Stated Meeting, October 17, 1902.

Vice-President, Dr. H. S. Birkett, M.D., in the Chair.

Dr. W. H. P. Hill was elected a Resident Member of the Society.

A Case of Purpura.

Dr. W. F. Hamilton reported this case. See page 875.

Dr. Birkett asked if the hæmorrhages were found on the buccal mucous membranes. He had had an opportunity of seeing two cases such as these, one showed extensive hæmorrhages of the buccal mucous membrane extending into the larynx; one into the tonsils was sufficiently large to destroy a portion of it. The second showed hæmorrhagic spots in the trachea, and accompanying it was the expectoration of blood. Both, though extremely severe, made a good recovery.

Dr. Adami asked if there had been any blood examination in the case.

Dr. Hamilton, in reply, said that no further examination of the respiratory tract was made than by simply opening the mouth, but as the patient spat blood, there must have been similar conditions lower down. The blood was not examined regularly, but on three occasions cultures were made with ordinary precautions and nothing found. A practically normal finding was shown so far as red and white cells and hæmoglobin were concerned.

Preliminary Note on the Use of Antistreptococcus Serum in Scarlet Fever.

Dr. G. A. Charlton read a paper with this title. See page 753 of the October number.

Dr. Birkett asked if in any of the cases there had been a membranous angina.

Dr. Laberge three years ago had tried antistreptococcus serum in treating diphtheria. Of 26 cases he obtained a remarkably good result in only four, and all four were from the same institution. Three of them were very ill, but the symptoms disappeared completely by the end of three days. He thought that the antistreptococcus serum to be efficient must be derived from the same form of organism as affects the patients, and he hoped some day there would be on the market a serum in which all the different forms were represented. Last summer he had treated two smallpox patients, in one, which developed immense boils all over the body during convalescence, with most satisfactory results, but the other had been unaffected.

Dr. Adami said that if it were not that Dr. Moser, together with other able men such as Paltauf and Escherich, had already published their work on this subject and the results of Dr. Charlton were so in harmony with theirs, he would have doubted the wisdom of bringing the matter up at this time. As it was he was fully justified. In the results so far obtained there was much promise.

Dr. Martin asked if the serum used was of the one variety and prepared from cultures all made at the same time. The good results might be due to using a very virulent serum, as it was well-known that the streptococcus was very variable.

Dr. Fisk while in the Civic Hospital in 1897, had had one experience with Marmorek's streptococcus serum, but without any favourable result, except that convalescence was more rapid than usual.

Dr. Charlton, in reply, said he had used batches of serum from four different horses and all with equally good results. He was unable to give the process by which the serum was made, but it was carefully prepared. The antistreptococcus acts similarly in diphtheria, but while in scarlet fever one got 50 per cent. of the cases with secondary infection, in diphtheria only 8 or 10 per cent. were so affected. In nearly all of the cases there had been a pseudo-membrane and in 60 per cent. the membrane was on the tonsils.

A Case of Neuropathic Arthropathy.

Dr. A. E. Garrow reported this case. (To be published next month.)

Dr. James Stewart drew attention to the unusual character of the case, in that it occurred in chronic myelitis, probably syphilitic in origin. Although most common in tabes, it was met with in other conditions.

Dr. Shirres had seen the case in Burlington, where it was thought to be tuberculous in origin as scrapings from the skin lesion on the face proved that to be lupus. Apparently at first the condition was due to pressure involving the posterior columns and lateral tracts, as the patient had disturbance of sensation and a spastic condition of the limbs. He did not remember ever having seen mention of a case of Charcot's joint in the shoulder.

Dr. Elder was not satisfied with the proof that this was a Charcot's joint, the X-ray had not shown it and according to the report there was not any evidence of dislocation or the looseness associated with Charcot's joint.

Dr. Garrow, in reply, stated that he had been careful not to call the condition a Charcot joint, but had classified it as one of neuropathic arthropathy. The symptoms as enumerated did not point to any form of infective arthritis that he was acquainted with and he consequently thought it must be classed under the above heading.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,
F. J. SHEPHERD,

WITH THE COLLABORATION OF

C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. NOVEMBER, 1902. No. 11.

THE CIVIC HOSPITAL FOR INFECTIOUS DISEASES.

The urgent need of a well equipped modern hospital for the treatment of infectious diseases is brought home to members of the medical profession more than to any other class of the community. It is, therefore, a public duty on the part of the profession to urge the erection of such a building in Montreal at as early a date as possible, and the series of resolutions adopted after mature consideration by the Montreal Medico-Chirurgical Society, should go far to sweep away the irritating and wanton opposition to the erection of such a building.

The City Council have had prepared an elaborate set of plans for a hospital. Unfortunately, however, the question of site has given rise to a discussion which has dragged through the summer and even yet shows no signs of abtement. To our view the proposed site on Fletcher's Field adjoining the grounds of the Hotel Dieu is an ideal one. On rising ground, with park land on three sides, it offers perfect facilities for drainage and secures for ever an abundance of fresh air and sunlight. Another great advantage pointed out in the resolution of the Medico-Chirurgical Society, is the central position of the site, thereby minimizing the tedious and exhausting drive in an ambulance and enabling physicians to visit their private patients at a moderate cost in time.

To the objection that it forms a menace to the health of families of citizens using the locality as a playground, there is not an iota of reason. Diphtheria and scarlatina, the two maladies for which provision is proposed, are well-known not to extend their infection beyond a limited area by äerial conduction. The experience of all large fever hospitals, many of them in densely crowded districts, all show that there is no undue prevalence of these ailments in their neighbourhoods. Every practitioner can recall instances in which patients suffering from these diseases have been successfully isolated in the top floors of dwelling houses, and in which the malady has been confined to a single case. Surrounded as the proposed civic hospital is to be by a plot of ground and walled off from the adjoining property, surely the dangers of infection cannot be said to exist beyond the hospital premises.

We cannot too earnestly impress on our city fathers the necessity of acting promptly and of pushing forward in the erection of a building so that it may be occupied during the winter, following the present one. Every case of infectious disease occurring in the poorer districts of the city now forms a menace to the public health, owing to the impossibility of securing isolation, and to the intercourse so often carelessly allowed with neighbours. The Civic Health Committee under Alderman Ames' chairmanship have carried out many reforms and they have the sympathy and co-operation of the entire profession in their uphill fight for an infectious hospital on the available site in Fletcher's Field.

NEW BOOKS, ETC., RECEIVED AND NOTED.

P. Blakiston's Son & Co., Philadelphia.

A Compend of Human Physiology. By Albert P. Brunaker, A.M., M.D. 11th edition. 1902.

Clinical Hematology: A Practical Guide in the Examination of the Blood with reference to Diagnosis. By John C. DaCosta, Jr., M.D. 1902.

A Guide to the Practical Examination of Urine. By James Tyson, M.D. 10th edition, 1902.

D. Appleton and Company, New York.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., LL.D. 2nd edition, 1902.

Lea Brothers & Co., Philadelphia and New York.

Progressive Medicine. Edited by Hobart Amory Hare, M.D. Vol. III., September, 1902.

Practical Diagnosis. The use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D. 1902.

W. B. Saunders & Company, Philadelphia and London.

The International Text-Book of Surgery. By American and British Authors. Edited by J. Collis Warren, M.D., LL.D., Hon. F.R.C.S.Eng., and A. Pearce Gould, M.S., F.R.C.S. Second edition, thoroughly revised. Vol. I. and Vol. II., 1902.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George P. Butler, Ph.G., M.D. Fourth edition, revised, 1902.

The Treatment of Fractures. By Charles L. Scudder, M.D. 3rd edition, 1902

Saunders' Medical Hand-Atlases. Atlas and Epitome of Traumatic Fractures and Dislocations. By Professor Dr. H. Helferich. Edited by Joseph C. Bloodgood, M.D. 1902.

A Text-Book of the Surgical Principles and Diseases of the Face, Mouth, and Jaws. By H. Horace Grant, A.M., M.D. 1902.

Atlas and Epitome of Hernias. By Dr. George Sultan. Edited by William B. Coley, M.D. 1902.

Saunders' Question-Compends. Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D. 3rd edition, 1902.

Essentials of Histology. By Louis Leroy, B.S., M.D. 2nd edition, 1902.

THE
MONTREAL MEDICAL JOURNAL.

Vol. XXXI. DECEMBER, 1902. No. 12.

Original Communications.

THE DIAGNOSIS OF DISEASES OF THE GALL BLADDER AND BILE DUCTS.*

BY

Alexander McPhedran, M.B.,

Professor of Medicine and Clinical Medicine, University of Toronto.

The bile ducts are but passages for the conveyance of bile from the liver cells to be cast out into the intestines, and the gall bladder is a diverticulum that acts as a temporary reservoir to receive the excess of bile when the discharge is less rapid than the secretion, as it probably often is in sleep and rest, at which time the flow lacks the stimulus of the active movements of the diaphragm and the abdominal muscles.

The outlet of the common bile duct into the intestine is considerably narrower than the calibre of the duct, and the pressure of the bile in the ducts is very low; a very slight impediment therefore suffices to interfere with its proper discharge, and cause a damming back of the bile in the bile capillaries, when it begins at once to be absorbed by the lymphatics of the liver and is discharged into the blood by way of the thoracic duct. The flow of bile may be impeded, or wholly obstructed, (1) by inflammatory swelling of the lining membrane of the ducts; (2) by gall-stones, or foreign bodies in the ducts; (3) by pressure from without by tumours, glands, etc. It is from obstruction that most of the symptoms of disease of the bile passages arise.

It is furthermore to be noted that the bile ducts, opening as they do into the small intestine, are peculiarly exposed to infection by the micro-organisms of the intestinal tract, especially the *bacillus coli communis.* As the bile may contain bacteria excreted from the blood, direct infection may also take place, as occurs, for example, in typhoid fever, but the danger is much less than that of infection from the intestine. Not only the inflammatory affections of the biliary passages, but gall-stones also are due to bacterial infection. The infection causes some catarrhal inflammation of the gall bladder. Increased secretion of mucus results, and this leads to a precipitation of calcium salts, cholesterine, and bile pigment, of which the stones are composed. Clumps of bacteria may constitute the nucleus of a stone. Further it is at least possible that malignant diseases are caused by infection. In the bile passages, with few, if any exceptions, the development of malignant disease is preceded by gall-stones, from which we can fairly infer that the irritation produced by gall-stones offers a favorable condition for malignant infection, if there be such; hence the much greater frequency of malignant disease of the gall-bladder than of the bile ducts.

---

* Read at the Canadian Medical Association Meeting, at Montreal, Sept., 1902.

The cardinal symptoms of disease of the bile passages are jaundice, pain, and fever.

Jaundice is the most common, as it is practically a constant symptom of the affections of the common bile duct.

As diseases of this duct always alter its calibre and therefore cause obstruction, it follows that jaundice must result. The converse is, I think, equally true, viz., that jaundice is always the consequence of obstruction of the common bile duct, or of its ramifications in the liver. A non-obstructive jaundice is described in the books, and acute yellow atrophy among others is given as belonging to this class; but in this disease, as in others of a similar character, there is ample proof of obstruction of the biliary canaliculi in the periphery of the hepatic lobules. It will certainly contribute to the definiteness of the pathological concept if jaundice signifies to us absorption of bile, and absorption that always results from its flow through the bile ducts being somewhere obstructed.

Fever is a frequent symptom in all forms of disease of the gall bladder and bile ducts. It is caused by the absorption of toxic material from the inflamed or ulcerated mucous membrane. Its severity usually accords closely with the gravity of the cause. In catarrhal jaundice the fever, if present, is slight, lasting three or four days; here the infection is mild. In marked obstruction, especially from gall stones, there may be recurrent chills with high temperature, the temperature being normal in the interval—the so-called hepatic intermittent fever. Chills and fever are more common, however, in suppurative cholangitis, which is very often associated with a history of gall-stone obstruction. It may occur also in obstruction from tumours, especially in rapidly growing cancers implicating the ducts. In gall-stone colic, even in the absence of suppuration, the chills and fever may recur in distinct malarial-like paroxysms of great regularity. The suppurative cases can only be differentiated by the continuous fever, deeper jaundice, tenderness in the gall-bladder area, rigidity of the overlying muscles, and the graver constitutional symptoms. If a decided increase of leucocytes is found on examining the blood the existence of a suppurative condition may be rendered certain.

Pain varies according to the cause; it is the earliest and may be the most distinctive symptom. It is referred to the upper right quadrant of the abdomen. In inflammatory conditions it is of varying intensity but usually moderate, and always continuous and associated with tenderness. That due to passage of gall-stones is, in typical cases, sudden in its onset; it may be mild, but is usually severe; so severe it may be as to kill outright. It is paroxysmal, and, as in colics generally, pressure gives some comfort. As soon as inflammation occurs in the gall-bladder or ducts, tenderness over this region and spasm of the overlying muscles occur, marked in proportion to the extension of the inflammation to the peritoneal covering; then there is also continuous pain. In neurotic patients, especially females, there may be marked tenderness over the gall-bladder without the existence of inflammation. It is due to hyperæsthesia; there is usually no spasm of the muscles in such cases.

I. Cholangitis and Cholecystitis.

1. (*a*) *Acute Catarrhal Cholangitis,* or Catarrhal Jaundice, occurs usually in younger persons and is generally easily diagnosed. Jaundice in a young person coming on without pain or apparent cause, except disturbed digestion, is most probably catarrhal. Absence of pain, and of emaciation, and a negative examination, usually renders the diagnosis certain. If the condition lasts more than a week or two the possibility of grave disease such as acute yellow atrophy should not be overlooked. The general disturbance may be so mild that faint tinging of the conjunctiva is the first thing noticed; generally, however, the jaundice is preceded by symptoms of gastro-intestinal disturbance, as anorexia, nausea, furred tongue, foul breath, constipation, malaise, headache, etc. Ordinarily the cause is soon removed and the symptoms quickly disappear, and we surmise that the condition is due to catarrhal swelling of the mucous membrane of the bile passages with consequent impediment to the flow of bile; its absorption by the hepatic lymphatics giving rise to a mild jaundice.

Sometimes the obstruction is more decided and persistent, and the symptoms may continue for weeks. In such cases the liver may become enlarged, the general health impaired with loss of flesh and strength, and the condition assume the general appearance of serious organic disease. Such cases may assume the appearance of the early stages of acute yellow atrophy, so that in children when the jaundice does not abate within a week, and still more, if it increases, a guarded prognosis should be given.

Gall-stone jaundice is easily excluded if the symptoms are definite—by the attacks of sudden pain and the jaundice increasing with each attack of pain; but remitting in the interval; by the history of preceding attacks of gall-stone colic; and often by the associated paroxysmal hepatic fever. But gall-stones may cause little pain and tenderness, and be thus indistinguishable; in such cases, however, the jaundice is catarrhal. In malignant disease, in which the jaundice is always partly due to catarrhal swelling, the loss of flesh, cachexia, ascites, tumor, and nodules in the liver serve to distinguish the more grave lesion.

In cirrhosis the slight jaundice, more advanced age, previous history, and ascites, are usually sufficient to differentiate. Hypertrophic cirrhosis is distinguished by the large liver, the ascites, the more advanced age, and the chronic course.

(*b*) *Chronic Catarrhal Cholangitis* is rarely a sequel of the acute affection, but usually results from the continued irritation of some persistent cause as gall-stones, carcinoma, etc., implicating the bile ducts, or pressure from without. The mucous exudate may be so inspissated as to cause attacks of colic which may be indistinguishable from those due to gall-stones. There is, however, usually little if any increase of jaundice in such colic, as there is in colic from gall-stones in the common duct. In these chronic cases the inflammation may extend through the duct wall and affect the peritoneal covering and adhesions to surrounding structures follow. Such adhesions may give rise to severe pains resembling colic; they are usually less distinctly paroxysmal, but tend to be more continuous with exacerbations like inflammatory pains.

2. *Suppurative Cholangitis and Cholecysitis:*—This is called *Infective Cholangitis*, but the term is not well chosen, as inflammation of the tract is always infective.

The results of infection depend rather on the degree of impediment to the flow of bile than on the inherent qualities of the infecting organism. The more complete the arrest of flow the more virulent is the infection likely to become. Normal bile is sterile, and organisms are not easily grown in it, not because of its antiseptic properties, but owing to its poverty as a nutrient medium. If there is a free flow of bile the organisms have little opportunity to grow and develop malignancy, but if the flow of bile is obstructed they flourish in the exudate that takes place from the diseased passages. Probably therefore all varieties of inflammation of the gall-bladder and passages are but gradations of infection by such organisms as bacilli coli communis, streptococci, staphylococci, pneumococci, and typhoid bacilli. Infection with little obstruction of bile flow usually produces catarrh; with complete stoppage a septic cholangitis and cholecystitis, that may be so severe as to be gangrenous.

In the great majority of cases of suppurative inflammation there is a history of gall-stones, and one or more of these are found impacted, or acting as "ball valves," in the ducts; other cases occur from infection by the organisms of such constitutional diseases as typhoid fever. In the mildest cases, in addition to the gall-stone colic with some intermittent jaundice, there are more or less marked chills and fever followed by sweating. The regularity of the recurrence of chills may simulate malarial fever, but such regularity rarely lasts long.

If the obstruction is more marked, and therefore the infective organism more virulent, the symptoms become more grave. The chills, fever, and sweating are more decided, and the jaundice is more marked and persistent. Unless relieved a general condition of sepsis soon develops, the patient dying in the typhoid state.

If the disease has developed in the absence of gall-stones, there will be little pain, but it is rare to find none present. The liver becomes regularly enlarged and somewhat tender. On account of extension of irritation to the peritoneum there is usually tenderness below the right costal margin. If the disease follows gall-stone colic which has recurred from time to time the diagnosis may be easily made; in other cases a diagnosis is often impossible. Cases of pylephlebitis present a similar picture and cannot be distinguished, unless a focus of infection of the portal system can be discovered. In both there is marked leucocytosis. The gall-bladder is nearly always affected in cholangitis, though probably rarely secondarily to it, as the cystic duct is closed early. There is always distension of the gall-bladder, and the inflammation extends to the surrounding peritoneum, hence there is always tenderness, and a pear-shaped tumour is usually palpable at the costal margin in the line from the tip of the ninth costal cartilage to a point one inch below the umbilicus. This is the usual seat of it, but not rarely it becomes much displaced especially if the gall-bladder is greatly enlarged. It moves with respiration, and an incisure may be found between it and the liver. As the inflammation affects the peritoneum the tenderness increases, and adhesions take place to surrounding structures so that the tumour becomes less definite, and the increasing spasm of the abdominal muscles interferes with examination. Pain is usually continuous; and fever moderate, although it may be absent. Fever is said to be more marked when there is ulceration of the mucous membrane of the gall-bladder, and the pain more marked when there is no ulceration.

In the gangrenous or phlegmonous cases as in all acute intra-abdominal diseases, the diagnosis is difficult in proportion to their severity. The more severe the symptoms the more they lose their localizing characteristics and the less likely they are to indicate even the section of the abdomen in which the disease occurs. The symptoms are those of *peritonism*, and are such as may arise from gangrenous inflammation of any abdominal organ, as gangrenous appendicitis for which they are most frequently mistaken. They simulate also strangulated bowel, gangrenous pancreatitis, perforation of the stomach or intestine, and acute intestinal obstruction. A previous history of cholecystitis, of gall-stones, or an infective fever, especially typhoid, indicate the gall-bladder as the seat of disease and may enable us to make a diagnosis.

II. Cholelithiasis.

Gall-stones are said to occur in 20 per cent. of all persons over 60, but to produce symptoms in only 5 per cent. of those affected. The occurrence of symptoms depends, first on the situation of the stones, and, secondly, on the condition of the wall of the gall-bladder and the surrounding tissues. So long as the stones lie in the gall-bladder no symptoms arise directly from them; it is only as they block the ducts that they cause disturbance. Once the wall of the gall-bladder and the tissues around it become inflamed, the occurrence of symptoms may be quite independent of the presence of stones.

Of those in whose gall-bladders there are stones, in a large group there are no symptoms; in a smaller group, the symptoms are mild, consisting of slight disturbances in the region of the liver and stomach, such as may arise from gastric catarrh with hyperæsthesia, floating kidney, slight adhesion of the stomach, or a neurosis. The possibility of gall-stones should not be forgotten in such cases. In the third and smallest group the symptoms are severe; they may or may not be characteristic.

In a typical case, the onset is sudden, it may be with such slight prodromata as chilliness, nausea, and malaise. There is usually no apparent cause for the symptoms, though there may have been some error in diet. The pain may be sudden in onset and extreme from the first, or, begin mildly and become slowly or rapidly severe. It is felt in the right upper quadrant of the abdomen, with some extension to the left. It radiates to the back, the right shoulder, and even down the abdomen and thigh. It may be so severe as to cause collapse. Usually it is somewhat paroxysmal, and terminates abruptly. Nausea and vomiting may be marked. Such is the description given of the pains of gall-stone colic. The description may locate the pains more definitely in the right upper quadrant, but, unfortunately, in many cases it is not so typically located.

The difficulties of diagnosis are well illustrated in the following cases.

In a lady whom I saw a few days ago there was a history of attacks of colic extending with intervals over 8 years. In the earlier years she said the pain always began in the lower zone of the abdomen, and gall-stones were not suspected as the cause; in recent attacks the pain was rather diffuse in the area between the ensiform cartilage and the umbilicus. Her gall-bladder now formed a freely movable pyriform tumour extending nearly to the umbilicus. There was persistent vomiting and marked prostration. There was no fever, yet leucocytosis was so decided that empyema of the gall-bladder had doubtless occurred in this attack. Her general health was such as not to permit of operation, and she died two days later.

In another case, a lady of rather neurotic temperament, the pain began at the costal margin, just at the ninth cartilage, but was greatest to the right of the spine between the eighth and twelfth ribs where there was much tenderness of the muscles with radiation of pressure pain to the front: to the gall-bladder region if the pressure was made over the eighth or ninth ribs, and to the appendix region if over the eleventh and twelfth ribs. There was marked tenderness in the region of the gall-bladder, but no spasm of the overlying muscles. The tenderness was evidently due to hyperæsthesia and not to inflammation. The recurrences of pain were irregular, sudden in onset and ceased suddenly, bore no apparent relationship to food, and were often accompanied by vomiting. There were no symptoms of gastric ulcer or history to indicate perigastric adhesions. The gall-bladder could not be made out with certainty. The right kidney was slightly prolapsed so that the lower portion of it could be palpated. In such a case only a probable, or even a possible diagnosis of gall-stones could be given. Some years ago Boas drew attention to tenderness to the right of the twelfth dorsal vertebra as a sign of gall-stones. The tenderness may persist long after the attack has subsided. In the foregoing case tenderness was more diffused and was nearly as marked on the opposite side.

Jaundice is usually said to occur in one-half the cases of gall-stones, that is, we are to infer that in half the cases the stone passes into the common duct. My own experience places it much below that. Stones in the gall-bladder and cystic duct cause no jaundice unless from extension of catarrhal inflammation to the common duct. It is probable that in considerably less than one-half the cases with a history of gall-stones do any stones pass through the cystic into the common duct, so that in only a minority of cases will gall-stones interfere with the flow of bile from the liver; it is only in the "successful," not in the "unsuccessful" attacks that jaundice occurs (Riedel). If the stone does not gain access to the common duct jaundice follows the attack of colic in one or more days after its escape from the cystic duct. Its amount and duration will depend on the degree and duration of the obstruction. As soon as the stone passes into the intestine and the obstruction is removed the bile flows freely again and the jaundice rapidly disappears. The stone, however, may become impacted in the duct, or lodged in the ampulla just above its outlet. The obstruction will cause dilatation of the duct with distension especially around the stone; this allows the stone to float backwards and bile escapes, and the jaundice lessens until the stone again blocks the passage. The process is repeated and continues so long as the "ball-valve" action of the stone continues. With these recurrences of obstruction there may be repetitions of chill and fever. This variation in the jaundice is almost pathognomonic of gall-stone obstruction as jaundice from other forms of obstruction usually remains unabated while the obstruction lasts. Gall-stone obstruction rarely gives rise to unvarying persistent jaundice unless the stone is lodged at the outlet of the duct into the intestine, a rare event. In gall-stone jaundice the liver is rarely much, if at all, enlarged, and the enlargement takes place more slowly than in jaundice from carcinoma.

Fever of the intermittent hepatic type is not uncommon in the cholangitis associated with gall-stones, and is of serious import in proportion to its severity and continuance. If with it tenderness in the gall-bladder area with spasm of overlying muscles, the development of a tumour in this region, and rapid increase in leucocytosis occur, there is little doubt of pus formation in connection with gall-stone obstruction.

Tumour as a result of gall-stone obstruction is not common because of the inflammatory thickening of the wall of the gall-bladder which usually precedes and accompanies the formation of the stone. If the changes in the gall-bladder are but slight a plug in the cystic duct may cause great distension of it by mucoid fluid secreted from its wall. It then forms a smooth pyriform tumour with its large end towards the umbilicus, freely movable at its lower end and fixed to the liver above and moving with it. If not too much distended and a number of stones are present, and if the abdominal wall is thin and relaxed, crepitus is sometimes obtained on manipulating the tumour. There are, however, a good many "ifs" to be provided for before this sign is obtainable. Such a tumour has to be differentiated from tumour of the pylorus, and of the head of the pancreas. If it is large and dislocated it may be difficult to distinguish from floating kidney, or from a cyst of the ovary.

Gall-stones may be diagnosed with certainty in the following conditions:

(1) Recurrent attacks of colic at the right costal margin with or without jaundice, with nausea and vomiting, and tenderness in the gall-bladder region. A history of such attacks, especially at long intervals renders the diagnosis certain.

(2) Recurrence of jaundice of short duration, or of long duration if preceded by colic. In such conditions the degree of jaundice is usually variable. Previous attacks of jaundice with gall-stones in the fæces are, of course, conclusive.

(3) Attacks of colic followed by jaundice a few days later.

Several conditions produce symptoms similar to those of gall-stones. In many cases of gastralgia the pain is sudden in onset and severe and is occasionally accompanied by nausea and vomiting. Such attacks may be due to a variety of causes, such as gastric or duodenal ulcer, hyperacidity in cases of gastric hyperæsthesia, and adhesions of the stomach to the gall-bladder or bile ducts. In the last class with the attacks there may be jaundice, and thus simulate a gall-stone attack very completely. A history of gastric ulceration or of gall-stones would be of great value in such circumstances. The attacks in such perigastric adhesions usually persist longer than gall-stone colic, and recur for years without material injury to health. They usually resemble gastric ulceration with hyperacidity more than gall-stone colic. The pain of neurosis, especially in neurotic women, may give much difficulty. The second case already described is one in point. In that woman there was the pain of neurosis, but that there was not also pain from gall-stone irritation of the cystic duct was quite uncertain. The gastric crises of tabes dorsalis may cause difficulty, especially if they occur before the other symptoms become manifest.

By way of conclusion I may say that in typical cases of gall-stones, as well as of diseases of the gall-bladder and bile ducts, the diagnosis may present no difficulties, but in the atypical—and they form the great majority—more than a probable diagnosis is impossible. Inflammation may simulate stone; and stone, inflammation. Tumour may simulate both. One often masks the character of the others.

A positive diagnosis being impossible, it only remains to be armed with a full appreciation of the difficulties to be met and of the conditions that may lead astray.

THE MEDICAL TREATMENT OF DISEASES OF THE BILIARY PASSAGES AND GALL BLADDER.

BY

A. D. BLACKADER, B.A., M.D.,
Professor of Pharmacology and Therapeutics, Lecturer on Diseases of Children, McGill University ; Physician to the Montreal General Hospital, etc.

I have been requested to say a few words to open that part of this discussion dealing with the medical treatment of diseases of the biliary passages and the gall bladder. Diffuse suppurative inflammations and stenosis, and obstruction of any one of the ducts of a mechanical character, are admitted by all to demand immediate surgical intervention and, therefore, call for no remarks from me this morning. My observations will be limited to the treatment of the so-called catarrhal inflammations of the bile passages and gall bladder, and to the prophylaxis and early medical treatment of cholelithiasis.

Until recently the treatment of these affections has confessedly been very empirical, and the results obtained have been uncertain and disappointing. Many advances, however, have been made during the past few years in our knowledge both of the physiology and the pathology of these organs. Recent carefully conducted experimental investigations carried out in animals with artificial, and in men with accidental biliary fistulæ, have enabled us to appreciate the various influences which modify and alter the secretion of bile, and interfere with its passage from the liver cell through the minuter bile ducts to its exit into the intestinal tract. By this same method of investigation also we have been enabled to clear away much of the ignorance and confusion which has existed in reference to the action of drugs on this secretion. These advances in our knowledge may assist us in prescribing a more rational, and, therefore, more successful therapeusis.

Rational therapeutics must always be based upon a knowledge as exact as possible of the underlying pathology. Pathologists, however, have as yet spoken in a very hesitating way as to the morbid conditions present in jaundice not due to a demonstrable obstruction. The opinions of Hunter (1) carry much weight, although as yet post-mortem evidence of catarrhal inflammation of the ducts is very scanty. Our present views may be epitomized as follows:—The liver, situated as it is on the most important vessel of the portal circulation, besides performing its important offices in regard to metabolism, acts as an important excretory organ much in the same way as the kidneys do in the general circulation; and in doing so it protects the system against the entrance of toxic drugs and the crude and irritating products of faulty digestion. The products of normal digestion carried to the liver and excreted in the bile are non-irritant. It is otherwise in certain disorders of the gastro-intestinal tract associated with the formation of irritating toxines, which toxines, when absorbed into the portal system, are arrested and excreted by the liver cells into the bile, altering its non-irritant character. If this bile were poured directly into the intestines, little or no disturbance might arise, but, instead of this, it is passed at a very low pressure along a system of minute canals lined with epithelium which is itself excretory. This epithelium under normal conditions appears to secrete a considerable quantity of watery fluid into the bile, rendering its consistence thin and its flow easy. Under the influence, however, of irritating properties in the bile the secretion of this lining epithelium is increased in quantity, and becomes mucus and viscid in character, thus checking the onward flow of the bile, and, in the more severe cases, producing such a rise of pressure in the ducts as to lead to some re-absorption by the lymphatics.

The results obtained by Stadelmann (2) in his experiments with toluyl endiamin afford us a curious illustration of this condition in an extreme degree. When this drug was administered to dogs, it promptly produced an attack of jaundice, which could be attributed only to the marked increase in the viscidity of the bile, resulting not from changes in the bile as secreted by the liver cells, but from a greatly increased secretion of mucus by the walls of the bile ducts. This increase of viscidity, associated with an inflammatory swelling of the epithelial lining of the ducts, brought about a stasis in the bile current leading to re-absorption of the bile through the lymphatics into the general circulation, and thus gave rise to the symptoms of icterus. The jaundice in this case had nothing to do with the duodenum, for it occurred even when the common bile duct had been ligatured and a biliary fistula established.

Fortunately few toxines or drugs possess properties so irritating to the mucous membrane of the bile ducts as this toluyl endiamin, but Hunter (3) considers the icterus of epidemic jaundice, of febrile jaundice, of the jaundice of Weil's disease, of acute yellow atrophy, of the various specific fevers, such as yellow, relapsing, and malarial, and of pyæmia, to be of a similar nature.

He is also of the opinion that some retardation of the flow of the bile associated with a slight degree of catarrh of the bile ducts frequently underlies the ailments included under the term lithæmia, and popularly attributed to "biliousness" and a "torpid liver", ailments not infrequently accompanied by more or less tinging of the conjunctiva.

It is easy, on this supposition, to understand the good results often resulting from the employment of the so-called hepatic stimulants, such as mercury, podophyllin, and rhubarb, which, as we now know, have little direct action on the liver cells, but a very distinct action on the gastro-intestinal mucosa.

Closely associated with any retardation in the on-flow of the bile in the ducts is another important factor in the production of disease in these passages, namely, the infection of the bile by micro-organisms. In health the bile is sterile. Attempts to prove that it is not so have not been confirmed, though the old idea that it possesses marked antiseptic properties has been overthrown, and investigators have shown that many forms of micro-organisms may grow luxuriantly in it under certain conditions.

Infection by bacteria may take place in two ways. We may have an ascending infection through the biliary passages from the duodenum. In this case an infection is possible from either the bacillus coli or the streptococcus, as these bacteria are frequently present both in the duodenum and in the lower end of the ductus choledochus. We may also have an infection through the portal circulation; bacteria absorbed from the intestine may pass in the blood through the portal vein, be eliminated by the liver, and pass into the bile. Fütterer (4) has demonstrated that typhoid bacilli may readily pass in this way into the gall bladder. Fraenkel and Krause (5) have shown that the bile is a much frequented habitat of the typhoid bacillus, and cultures made from bile in the gall-bladder in 30 autopsies of patients dying of typhoid fever showed the baccillus typhosus in 21. Chiari (6) found the typhoid bacillus in 19 out of 22 cases of typhoid fever, and Osler (7) states that Flexner found them in 7 out of 14 cases, but in no case was there any clinical or pathological evidence of an inflammatory reaction in the gall bladder. To permit an active infection some stagnation in the bile current appears to be necessary.

Naunyn's experiments demonstrated that only after ligature of the common duct will an injection into the hepatic duct of a culture of the bacillus coli be followed by inflammation. Peterson,(8) referring to cases of cholelithiasis occurring in Czerny's Klinik, says, "after the operation the bile which escaped in the fistulous opening was examined from time to time, and it was found that the bacteria diminished rapidly as the bile continued to flow, and were often found to have disappeared at the end of eight days, almost always after three to four weeks." In one experiment Cushing (9) found that the typhoid bacilli introduced directly into the gall bladder of the dog, disappeared in 24 hours with the free flow of bile. Many other experiments that I could mention indicate conclusively that without stagnation in the onflow of the bile, an active infection does not take place.

Still further, a retardation in the onflow of the bile associated with a catarrhal condition of the bile ducts, and a consequent increased secretion of mucus and exfoliation of epithelial cells, undoubtedly plays a very important, if not the most important, part in the formation of gall stones. The majority of gall stones, as we know, are formed chiefly of cholesterin, having a nucleus either of clumped bacteria or of bilirubin calcium. Cholesterin has been regarded as a normal constituent of bile, in which it is held in solution by the bile salts and by the small quantity of fats and soap present in bile, but it appears to be very doubtful whether it is actually formed in the liver cells. Experiments carried out in Naunyn's laboratory would indicate that there is no separation whatever of cholesterin from the blood by the liver cell, and that the amount found in the bile is in no way dependent upon the quantity or character of the food taken. Naunyn (10) considers that only a very small amount, if any, of the cholesterin in the bile is formed by the liver cells, but that a much larger amount is derived from the epithelium of the biliary passages and is a product of the disintegration of their protoplasm. He adds that whatever view may be taken of the source of the cholesterin of the bile in health, there can be little doubt that the biliary passages are its source in disease. What, then, are the conditions leading to its formation in increased quantities and to its precipitation ? Statistics show that gall stones are extremely uncommon in young persons under 30, and are most frequently met with over 60. They are three to four times more common in women than in men; they are also much more frequent in those who suffer from conditions favouring retardation of the bile current. Such conditions exist in those who lead an inactive life, in persons suffering from mitral stenosis, and in those in whom the movements of the abdominal and respiratory muscles are hampered by tight-lacing, obesity, pregnancy, or abdominal tumour. Stasis in the onflow of bile in the ducts, therefore, appears to be an important etiological factor in the formation of gall stones. How does this stasis lead to cholelithiasis ? Frerichs taught that under conditions of stasis changes took place in the bile, its reaction became acid, the bile salts were decomposed, and the cholesterin was precipitated. Naunyn,(11) however, questions this explanation, and, as the result of his investigations, regards the infection of the bile by micro-organisms as the efficient cause of the increased secretion from the epithelium of the bile passages. When stagnation occurs from any cause, a bacterial infection is favoured. Should such infection take place, a catarrhal cholangitis and cholecystitis is set up; cholesterin is formed in an abnormal amount, which is afterwards readily deposited on any suitable nucleus, either a minute bilirubin calcium calculus, or a clump of typhoid or colon bacilli. Still it is to be remembered that stasis is the important underlying factor permitting such infection, for with a free flow of the bile we know that bacterial infection tends to disappear rapidly.

Stasis is also an important factor in the formation of the bilirubin calculi. Pure bilirubin is never precipitated (Hunter), but under certain conditions it combines with calcium and is then precipitated as an insoluble compound constituting the gritty particles sometimes met with in the intrahepatic ducts, which may grow to form small calculi, or may form the nucleus of a cholesterin gall stone. Bilirubin and calcium are both normal constituents of the bile, but under ordinary circumstances never combine to form this insoluble compound, even when lime is added directly to the bile in considerable excess; the combination being prevented by the presence of the bile salts. Naunyn found, however, that the addition of a small amount of egg albumin to the bile at once brought about a precipitation of this insoluble salt. He, therefore, considers it highly probable that the albuminous material derived from the desquamation and disintegration of the epithelium of the bile passages in catarrhal conditions is the chief determining cause of the precipitation of these small concretions. This catarrhal condition is dependent to a great extent on stasis in the bile current associated with either a bacterial infection or the excretion of irritating toxines in the bile, so that again we have stasis as the important etiological factor to be considered in our therapeusis.

Recognizing, therefore, the importance in the etiology of the diseases which we are now considering of any retardation in the on-flow of the bile in its ducts, let us briefly enquire into the means at our disposal for modifying the amount and character of this secretion and for favouring its passage through the small ducts till its exit into the intestine.

Placed, as the liver is, upon an efferent vessel of the alimentary canal, its vascular condition must vary with the varying conditions of the gastro-intestinal tract. The mere taking of food in itself produces an increased secretion which becomes marked within an hour and greatly increased after four or five hours have elapsed. Heidenhain (11) has also shown that in dogs, section of the splanchnic nerve, by producing a general dilatation of the portal vessels, causes a marked increase in the flow of bile, while stimulation of that nerve, by inducing a contraction of the same vessels, diminishes the secretion of bile.

Our knowledge is still defective as to the exact influence on this secretion of the various constituents of the food. Fats appear to have a marked effect in increasing the amount of bile secreted and also the amount of fat excreted in the bile. Rosenberg (12) has shown that the influence of the fats in stimulating the secretion of bile is much more distinct than that of either proteids or carbohydrates. Barbara (13) in a recent paper has stated that the excretion of bile after a meal of proteids or carbohydrates, runs parallel with the excretion of urea, while after a meal of fats, bile secretion increases out of proportion to the urea; and Albu (14) says that in a woman with biliary fistula he found that a diet consisting of eggs, soups, white meat, vegetables and fruit, caused a more abundant outflow than one in which meat figured largely.

The secretion of bile is also influenced by the amount of fluid taken, but there is no mechanical filtration such as exists in the kidneys, as the bile is excreted at a pressure several times higher than that in the portal vein. The amount of water excreted is, therefore, dependent on the activity of the liver cells and not on the water in the blood. At the same time, it has been observed that in the case of a woman with a biliary fistula, the amount of bile excreted was greater upon the days on which a large amount of fluid was taken, and that this increase was in the quantity of the water and not of the biliary salts.

The determination of the influence of drugs on the biliary secretion has been beset with many difficulties; and even in the case of the few which apparently stimulate this secretion, it is difficult to be sure of the exact part played by the liver cell itself and by the expelling apparatus, and of the effect produced by the action of tissues outside the liver, such as the intestinal glands and mucosa. Careful experiments, however, have been recently made in cases of accidental biliary fistulæ, and the effect of drugs carefully observed.

The more important drugs which have been found to increase the flow of bile are: turpentine, salol, sodium salicylate, sodium benzoate, and euonymin, but no drugs stimulate the flow so powerfully as do the bile salts, the glycocholate and taurocholate of soda. The action of sodium bicarbonate, sodium chloride, sodium sulphate, Karlsbad salts, aloes, rhubarb and ipecac, is so slight as almost to amount to nil; while calomel, strychnine, and potassium iodide rather diminish the flow.

A recent investigator has questioned the existence of any drugs directly influencing biliary secretion. But this, I think, is carrying scepticism too far; we know that the bile salts will stimulate the flow; similarly, but to a less extent, that sodium salicylate will increase the flow, and Rosenberg claims a direct cholagogic action for olive oil, which, in his hands, next to the bile salts, was the most efficient stimulant of the biliary secretion.

It is also to be noted that not only is the onflow of the bile in its passages influenced by the activity and character of the secretion, but also by the vigour of the peristaltic action of the muscular coat of the ducts, and by the pressure made directly on the liver and gall bladder by the movements of adjacent organs, notably by the excursions of the diaphragm and by the contraction of many of the abdominal muscles. Experiments have demonstrated that the flow of bile is much accelerated by vigorous and deep respiratory movements; a very marked increase in the amount of bile poured out takes place after waking and rising in the morning.

Having thus, very imperfectly I feel, reviewed the pathological and physiological facts with which we have to deal, let me briefly suggest a few broad lines of treatment.

In all affections of the biliary passages it is of the first importance that the blood carried to the liver cells by the portal vein should contain no irritating drug or toxin which after its secretion in the bile may have a tendency to maintain or increase irritation of the mucous lining of the ducts. To this end the dietary must be supervised and made to conform to the digestive capacities of the patient. No hard and fast lines can be laid down, but each individual must be carefully considered as regards his habit of body, his capacity for the digestion of the different articles of food, the amount of exercise he is able to take and the nature of his work. An all-important point is that the diet list should be a simple one; simplicity means facility of digestion. It is of the utmost importance to secure and maintain a healthy condition of the gastro-intestinal mucus membrane. To this end the occasional employment of a gastro-intestinal alterative and laxative, such as mercury, euonymin, podophyllin, or rhubarb, followed by an alkaline mineral water, will, I think, be of much service. For many reasons constipation should not be permitted. In Europe the waters of the Sprudel Springs in Karlsbad are highly esteemed. They are alkaline, laxative, and have a temperature of 110-115° F. At the same time it appears to me desirable that, except in conditions of actual blocking of the ducts, the free secretion of a normal watery bile is to be encouraged—to favour this the meals should be regular and at not too long intervals, and the daily dietary should contain as large an amount of fat as can be taken without disturbing digestion. Fat more than any other element of the diet stimulates the secretion of the bile, and at the same time acts as an efficient intestinal antiseptic. The free use of a pure water between meals should also be encouraged. The great majority of persons suffering from affections of the biliary passages will be found to take an insufficient amount of water to drink.

Luff (15) states that this insufficient consumption of fluid is especially frequent in women, and attributes the fact to the erroneous and absurd belief that a diminution in the amount of fluid taken tends to keep down the body weight and to prevent the occurrence of obesity. In the prevention as well as the treatment of these disorders, the free consumption of water, apart from the meals, is most desirable.

It is also of the greatest importance to develop and maintain a free and full action of the diaphragm and the associated abdominal muscles. All forms of clothing which tend to impede the action of these muscles or unduly press upon and tilt downwards the fundus of the gall bladder, must be discarded, and regular systematic exercises involving these muscles chiefly should be taken.

And lastly, the question arises, what can we effect by the administration of drugs? No drug that we know of has so powerful a stimulant action on the liver cell as its own bile salts, the glyco-cholate and tauro-cholate of soda, and in suitable cases, where the passages are not absolutely blocked, these may be administered in the form of ox-gall. The objection to the use of this drug, however, is that it contains not only the bile salts but the bile pigment, and in those cases where the system is already suffering from more or less reabsorption of these pigments, it is inadvisable to burden it still further by the exhibition of ox-gall, And here let me say that a sharp distinction must be made between these two constituents of the bile. Bile pigments are entirely of an excretory character. They are waste material, and according to Bouchard, they are toxic, and are not intended for re-absorption. It is quite different with the bile salts, of which four-fifths of the amount secreted by the liver cells are re-absorbed into the circulation and appear to subserve a useful purpose in the economy. Some purer preparation, therefore, of cholalic acid than ox-gall would appear to be a desirable addition to our materia medica.

In the slighter catarrhal conditions sodium salicylate and sodium benzoate both appear to be capable of rendering us some assistance, and as they are excreted in the bile, will doubtless assist in maintaining its sterility. They should be employed in doses of from 60 to 80 grains daily.

In the treatment of cholelithiasis, although the administration of olive oil has by no means fulfilled the expectations of those who first recommended it, yet I still think that in certain conditions it will afford us distinct assistance. The large doses originally recommended in the treatment of cholelithiasis are apt to disturb, and may in that way do harm, but in gradually increasing doses of from 2 to 6 ounces per diem, it will stimulate the secretion of bile, rendering it more fluid, and by increasing the amount of fat excreted in the bile, will increase considerably its power of holding cholesterin in solution.

During the actual attack sedative and anodyne measures are called for. We have no anodynes so effectual as the hypodermatic employment of morphine, or of morphine and atropine, and the application of local heat. At the same time, the free employment of an alkaline mineral water, such as Vichy, is to be commended, and this, I think, has a distinctly better effect if drunk as warm as may be convenient.

When the acuteness of the attack has passed, what measures are to be adopted? Are we, as physicians, at once to recommend operation? I think not. Naunyn (16) says cholelithiasis is a disease which becomes dangerous through cholecystitis and cholangitis and their consequences, through chronic icterus, and through carcinoma. Kehr (17) states, of a probable 2,000,000 Germans who have gall stones, only 100,000 complain of their trouble; with the remainder the disease is in a latent condition; and again, "Latent cholelithiasis is now to be regarded on the whole as a rather harmless affection." The great success which often attends a "Karlsbad Cure" is attested by all, and to those who can afford the time and the money, I should be inclined to give the option "of the regular life, the beneficial, pain-assuaging, laxative action of the Karlsbad Springs, the delightful influence of the Sprudel baths, with their peat poultices to the liver and region of the gall bladder. There the beautiful surroundings entice the cure-guest into the noble forest; he climbs the mountains, which in stillness leave nothing to be wished for, and he forgets the worry of his business and the pain of his disease. The cuisine permitted by the cure removes the sins of his club-life at home, and of the many strawberry and peach punches; whoever is not very sick must in a short time feel himself well." Such may well be the treatment of cholelithiasis for the prosperous classes.

In cases, however, of repeated unsuccessful attacks, as Riedel (18) calls attacks without the passage of stones, and in cases of prolonged impaction, unquestionably an operation by the surgeon is demanded. But even after the operation, the careful dietary, the free use of water, and a regular amount of daily exercise, are demanded to maintain freedom in the future from recurrence. The surgeon no more than the physician can promise an absolute cure.

REFERENCES.

1. Allbutt's System of Medicine. Vol. V. Article "Functions of the Liver."

2. Archives für exp. Pathologie u. Pharmacologie, xiv., pp. 231 and 422, xxiii., p. 427.

3. Allbutt's System of Medicine. *Loc. cit.*

4. Berliner Klin. Wochenschrift, 1899, xxxvi., p. 58.

5. Zeitschrift für Hygiene, 1899, xxxii., p. 97.

6. Zeitschrift für Heilkunde, 1894, xv., p. 199.
7. Trans. Assoc. American Physicians, 1897, xii., p. 378.
8. Beitrage z. Klin Chir., 1899, xxiii., p. 705.
9. Johns Hopkins Hospital Bulletin, 1899, x., p. 166.
10. Naunyn on Cholelithiasis. Sydenham Soc. Trans. A. E. Garrod, 1896.
11. Hermann's Handbuch, B. and V., p. 271.
12. Arch. f. d. Ges. Physiologie, xlvi, p. 243.
13. Bull. d. sc. Med. di Bologne, 1894. ser. 7, vol. v.
14. Berliner Kl. Wochenschrift, Oct. 1, 1900.
15. "The Practitioner," March, 1902, p. 313.
16. *Loc. cit.*
17. Kehr, "Gall Stone Disease," trans. by W. W. Seymour, p. 113. Blakiston's Son & Co., Philadelphia, 1901.
18. Riedel, Berlln. Klin. Wochenschrift, 1901. No. 1 and 3.

DR. JAMES BELL.—If a distinction is to be drawn between the medical and the surgical diagnosis of diseases of the gall-bladder and biliary passages, it would seem to be in the direction of later specialization in those conditions which fall into the hands of the surgeon for operative treatment. for most of these cases are first treated by the physician, and only a limited number of them are subsequently treated by the surgeon. The conditions which are generally referred to the surgeon, are: 1st, gall-stones in the gall-bladder or bile passages; 2nd, infective conditions leading to suppuration; and 3rd, malignant disease.

They should be enumerated in this order because both infective conditions and malignant diseases are usually sequels to an irritative lesion produced by the presence of gall stones. It must be remembered, however, that gall stones may remain for a very long time in the gall bladder without giving rise to symptoms, or perhaps it would be better to say, without having given rise to special diagnostic symptoms. Such I believe is the experience of surgeons, so that in many of these cases submitted to operation, the patient, some 5 or 10 years after operation, will declare that he or she has never felt so well for a great many years, and that prior to operation, for a great many years he or she suffered from "dyspepsia," "indigestion," painful conditions about the lower part of the chest, etc., etc., general symptoms which could not be referred to any special lesion, and that since operation all these have been entirely absent.

I believe that in many cases such symptoms as those referred to are due to the presence of gall stones in the gall bladder, perhaps for a long time before characteristic symptoms appear. The first of the characteristic symptom of gall stones is usually the so-called biliary colic, which is due to an attempt on the part of the gall bladder to expel the stone or stones through the bile passages, and if this attempt is not successful recurrence of the symptoms from time to time is to be expected.

In this connection, I may say that I have recently come to the conclusion that the bile passages are capable of a degree of dilatation and of allowing the passage of much larger stones than I hitherto believed or than is generally taught. I have known of the passage of very large stones which must have found their way directly through the gall passages and not by any irregular route. I have also known of the passage of large and long pieces of gauze which had been left accidentally in the gall bladder after operation.

Cholecystitis occurs, sooner or later, as a rule, when gall stones are present in the gall bladder, and then special symptoms are produced. Locally, pain and tenderness, fever, with usually, at first, distension of the gall bladder and later contraction, until it is not recognizable. In this condition infection is most likely to take place, infection by the typhoid bacillus, the colon bacillus, etc., being quite common and leading to suppurative or gangrenous conditions. Toxic symptoms, which are usually expressed by chills, fever, etc., frequently occur in such cases, but it is a remarkable fact that the severity and frequency of the chills and the height of the fever do not give any actual indication of the seriousness of the lesion; for instance, very severe and frequently repeated chills, with very high temperature, may occur in cases in which at operation no evidence of pus or of any suppurative process can be found, and the gall bladder, in addition to containing stones, contains what is to the naked eye appearances at least normal bile. In other cases in which the symptoms are no more severe, multiple liver abscesses or a suppurative cholangitis is discovered at the time of operation.

Jaundice is not such a frequent symptom as is generally supposed, and in fact is only due to obstruction of the common duct either by the lodgment of stones within it or swelling of its mucous membrane and extension of a cholecystitis. The differential diagnosis between gall stones and malignant disease of the biliary passages, especially in the early stages of the latter, is very difficult indeed, and in fact in most cases impossible.

THE VALUE OF X-RAYS AS A DIAGNOSTIC AGENT IN THORACIC DISEASE.*

BY

W. F. HAMILTON, M.D.,

Assistant Physician to the Royal Victoria Hospital ; Lecturer in Clinical Medicine, McGill University.

This year, for the first time, the Canadian Medical Association considers the X-ray method of the diagnosis and treatment of diseased conditions. It was while reviewing the programmes of the more recent meetings and while unable to find any record of a paper upon this topic, that courage was taken to make an attempt and prepare a few remarks upon what has so rapidly become one of the most important diagnostic aids in medicine and in surgery.

Since the great majority of our members have become more or less familiar through the journals and medical societies with the general results of the application of this new method, it is proposed in these remarks to consider in the first place what has been accomplished in thoracic examinations, and, in the second place, to illustrate some of the cases studied in the Royal Victoria Hospital.

How premature were some of the opinions expressed, concerning the applicability of the Roentigen Rays in 1897 and 1898, only now becomes apparent and in all probability—indeed, almost certainly—what is now believed and taught upon this matter will be found far short of the truth in ten years. Scarcely any one here need be reminded that in 1896 these Rays were discovered—now a few months more than six years. The development of the knowledge concerning them has been both rapid and far-reaching, and the first year had not closed before it was recognized that a far wider application of the discovery was made than was at first thought possible. And yet, within that year, one writer remarked that "it would surely try the patience, if not the sense of humour, were he to mention one-tenth of the absurd and utterly irrelevant questions he had been asked as to the efficacy of the X-rays. Some go so far as to *imagine a therapeutic use for them.*"

In what manner the application of X-rays to the thorax was considered, appears in the writings of the same authority. As we read the paragraphs indicating the results of practical application of these rays to diagnosis of disease of head, spinal column, abdomen and limbs, that devoted to the thoracic organs is most interesting. It opens as follows:—"Coming now to the thorax we enter upon a realm about which so much has been recently said concerning the application of the X-rays to the diagnosis of cardiac mischief . . . It is quite true that . . . a skiagraph of the heart can be obtained . . . but it must be remembered that a skiagraph thus obtained consists of nothing else but a shadow of the outline of the heart. . . . Consequently the knowledge that we can gain from the application of the method to this region of the body, is no more than can be obtained in a much simpler manner by the ordinary method of percussion." After making a brief reference to foreign bodies opaque to X-rays in the trachea or bronchi, or substance of the lungs, the writer passes on to consider another topic. It is plain, therefore, we think, that this paragraph sums up the knowledge of the use of this method as applied to the thorax at that time (October, 1896).

---

* Read before the Canadian Medical Association, Montreal Meeting, Sept., 1902

Apart from the treatment of certain cases, which marks a more recent advance in the trial of this method, the Roentgen Rays have found more general application in the diagnosis of surgical conditions. There is little doubt that those who concern themselves with internal medicine have not fully appreciated the advantages of X-ray diagnosis. Dr. Haughton, in a paper recently read before the Royal Academy of Medicine in Ireland, sought to explain this fact upon two reasons:—a natural diffidence to adopt a new method of examination whose utility was unproved, and a neglect on the part of advocates of the process to call attention to its utility in medicine. To these it seems we may well add a third and very important reason—the expense and skill necessary in the purchase and running of the apparatus, render the general application of this method of examination impossible apart from the larger or more well-to-do centres.

New methods of examination and investigation are almost certain to meet with opposition and we need not go outside that history which deals with the development of the methods in making diagnosis in thoracic disease for instances illustrative of this. The method of percussion, as old as Celsus, although used only in abdominal cases, was first adopted in thoracic diagnosis in 1761. Fifty years of ridicule and disregard followed, but in 1806 it was revived by Corvisart, and since that date has been generally adopted.

To cite but another instance, we may recall the fact that Laennec's discovery and invention of the stethoscope was not appreciated for years. In the Life of Stokes, one finds it stated that the science of the stethoscope was then only in its infancy . . . and . . . was met with opposition and adverse criticism. In his lectures on the application of the stethoscope to the diagnosis and treatment of thoracic disease Stokes says that "the sense of hearing has been called to our assistance and has, I will affirm, added more to the facility, certainty and utility of diagnosis than anything that has been done for centuries."

While inspection has been practiced so long in clinical medicine, *the eye* has done its work unaided by any specially devised appliances, and the observer could only infer from external signs the underlying internal conditions. By this new method—one of the greatest discoveries in medicine of the past century—we may really look within, and, as Bouchard and Claude put it, "the X-ray method of examination makes the evolution of disease visible to the eye." May we not hope that some day, as the clinical teachers in the future come more and more to appreciate this wonderful discovery in its application to internal medicine, some one may speak of the X-rays as enthusiastically and as broadly as Stokes did of the stethoscope, and the name of Roentgen may be found upon the Roll of Honour not far removed from those who taught clinicians the best way to investigate thoracic diseases.

When we turn to the literature which deals with X-rays in diseases of the chest, we find a large number of contributions. Among those who wrote early in 1896-97 are Bouchard of Paris, Stubbert of Liberty, N.Y., Williams of Boston, and Sydney Rowland of England. Holzknecht of Vienna, has recently published a special work upon the thorax. This publication and the very complete work of Francis H. Williams of Boston, afford us our highest authorities upon this subject. Time does not permit a lengthy discussion of these works, but it may be stated that the results of these various observers are hopefully in accord, and this is the best promise for the future, more general application of the method.

From the view point afforded by a little more than five years' experience, one observes several results which may be briefly enumerated:—

First. The fluoroscope in very many respects is of greater value than the skiagraph. While each method has its limitations, yet it appears that more satisfactory results can be obtained and in a shorter time by the use of the fluoroscope than by skiagraphy. When one remembers that the examiner desires to see the movements of the heart and of the diaphragm—to look at these from different positions in different degrees of light, etc.—and to see the shadows cast by abnormal areas under like varying conditions, one can readily understand how much more information may be derived from a few minutes spent with the fluoroscope than from the study of many skiagraphs which require so much time to make. The skiagraph, on the other hand, preserves a picture, while after the fluoroscope method one can only remember and describe it.

Another result of these years of experience which is well established is the fact that the position of the diaphragm and the type, or rather the degree, of excursion made in ordinary and forced breathing, is a most important and trustworthy method of judging of the lung capacity, or of the pleura itself. In this connection Williams has done most valuable work to which, later, reference will be made.

A third result, among others which may be mentioned, and this we have already indirectly referred to more than once, is that this method of examination should be applied in all obscure thoracic cases and only in conjunction with the most careful observation made after the older and well-tried methods of inspection, palpation, percussion and auscultation. Often, after a few minutes with the fluoroscope, one is induced to go over the thorax yet again applying the ordinary clinical methods.

Further, there is no longer any room to doubt that in this discovery we have a method which reveals conditions within the chest which are otherwise undiscoverable. The shadow of early pulmonary tuberculosis, but alas, not before the initial stage of the disease is well over; the deep-seated pneumonic patch; the exact position of the heart; the aneurysm without sign or symptom; the type of diaphragmatic movement, the height and contour of the diaphragm, and many other conditions which are only recognized in an autopsy, and yet which greatly aid in forming a true clinical estimate of the case, can be discerned only *by a careful fluoroscopic examination.*

There are so many accessible descriptions of the signs found by the fluoroscope and recorded by the skiagraph in pulmonary tuberculosis, pleurisy, pneumonia, etc., that one does not feel justified in occupying the time of this meeting in going over them. These signs, so far as they are shown by the skiagraph, may be better understood while we have the lantern views before us. The fluoroscope reveals them yet more clearly.

Before turning to consider the heart and the vessels in the thorax, we may refer again briefly to the diaphragm as revealed by the X-rays in health and disease.

Normally, this musculo-tendinous structure stands dome-like with its highest point opposite the fourth rib on the right and the fourth space on the left—its shadow being very dark, and especially so over the right side, owing to hepatic density immediately beneath. The difference in height is slight, 1 to 2 cm. On ordinary inspiration the curve of the summit and the phrenico-costal angle alter but slightly, but on deep or forced inspiration there is a little flattening of the curve and a slight increase of angle may be noticed.

Abnormally, the diaphragm may stand low as in emphysema, or high, as in pulmonary tuberculosis. Again, it may be higher on one side than upon the other, and it has been seen that this occurs in tuberculous processes in the lung of that side. The movements of the diaphragm may be limited as in,

(1) Loss of lung capacity,

(2) Obliteration of the pleural sinuses through inflammation, or,

(3) Adhesions and fibrosis about the diaphragmatic pleura, anchoring it either to lung or mediastinum as in pleurisy or peribronchitis with fibrosis,

(4) One side may be greatly depressed as in pneumothorax.

(5) The diaphragm has been described as in a state of immobility or fluttering movement in asthmatic cases. Thus the fluoroscope has cast another ray of light upon the possible causes of asthma,—a spasmodic action of the diaphragm.

In making fluoroscopic examinations it is quite easy to trace the outlines of these movements either upon thin paper, or upon the chest wall itself—and then comparison afterwards becomes easy.

The heart and the thoracic vessels:

We have already seen that it was with the heart that observers in thoracic skiagraphy first interested themselves. Now it is found that comparatively less can be taught about this organ than concerning the lungs. We may sum up our knowledge by saying that but little more can be made out than the situation and size of this organ, and to determine accurately the latter, special care and apparatus are necessary. Some workers urge that much of the work with this aim in view is useless, as this organ is so changeful.

For some time I have not agreed with those who were satisfied with marking out the superficial cardiac dulness and have maintained that with a little more care and time, the deep cardiac dulness could be mapped out, giving a better view of the size of the heart. Much is promised by this method in this connection, and the recent article by Grunmach and Wiedemann is a valuable help in this direction.

It will need time and practice to recognize the weak and the strong types of cardiac action described by Creigern. Already some work has been done in determining the relation between cardiac movements and the sounds, and it has been suggested that the apex beat is presystolic in time. It seems, therefore, that there is much work yet to be done in the fluoroscopic study of the heart. For instance, tachycardia, bradycardia, arrhythmia, intermittence of pulse, hypertrophy and dilatation may yet have much light thrown upon them. It has been claimed that dilatation and hypertrophy may be readily distinguished, while from either, one may readily separate a pericarditis with effusion.

The great vessels:

The aorta—This vessel can be studied immediately above the heart and to the left of the spinal column, behind the sternum. For the most part, it is in front of the spinal column and becomes noticeable just to the left of the central dark shadow immediately beneath the sternal portion of the clavicle where the descending portion of the arch stands out. Thence throughout the thorax it runs behind the heart and is practically unnoticed. The normal appearances are characteristic and one may readily recognize the abnormal changes.

Aneurysms are recognized by their situation and pulsatile character—which in most instances may be seen. It may be that pulsation is absent as the sac may be filled with blood clot. Williams and others have discovered aneurysms by this method when other methods yielded no evidence of their presence.

It is very important in examining into such conditions to get the shadows from all possible directions, antero-posteriorly, laterally, obliquely, and posterio-anteriorly.

As I have had no experience with new growths in the thorax, this part of the subject must remain over for another time.

Turning now to the second part of this paper, we shall deal as briefly as possible with a few skiagraphs, illustrative of some of the more common conditions found in the chests of patients under treatment at the Royal Victoria Hospital.

Case No. 1. A normal chest. The patient was a female, under treatment for hysteria, and from her state of nutrition very suitable for showing clearly the organs. One can see the shadows cast by the kidneys. The light was rather strong to show distinctly the shadow of the diaphragm.

Cases 2 and 3. Aneurysm of the aorta with two views. The skiagraph shows the abnormal increase of the transverse measurement of the mediastinum, and a shadow both on the right and left corresponding to the arch of the aorta.

This appears to be more of the fusiform type than otherwise. This abnormal condition is discoverable only on the right side. The skiagraph reveals more correctly the extent of the changes. The posterior view serves to confirm the anterior.

Case 4. Aneurysm of the innominate (?) artery. One may distinguish the large globular-like shadow. Clinically, the localization of this aneurysm has always been difficult. The radial and carotid-pulses have been equal. There has been no absolutely certain localizing sign, but when one considers that early in the case there were signs of dulness in the apex of the right lung and that the clavicle has been destroyed at its inner third, and that the tumour points upward and to the right, one has fairly good evidence in favour of its origin from the innominate artery. The skiagraph does not confirm this.

Case 5. Pulmonary tuberculosis. There was evidence clinically of a left apical lesion. It appears from the haziness or mistiness of the skiagraph that there are other areas similarly involved. The descending portion of the aortic arch is plainly seen.

Case 6. Right basic pneumonia seen on the eighth day, the day of crisis.

Case 7. The same case three days after the crisis. A change in the density of pulmonary tissue may be readily recognized.

Case 8. Pleurisy, with effusion.

Case 9 (*a*). Hydro-pneumothorax. It shows the line of level of the fluid—the heart displaced to the left and the dense, very dense, indeed, opaque fluid. It was purulent.

Case 10. Hydro-pneumothorax. The skiagraphic and fluoroscopic study of this case has been of great interest, indeed, the case is such from any standpoint. The onset was sudden in a healthy man. The temperature was never febrile. There were no signs of disease discovered in either lung. The heart became widely displaced to the right. Fluid in small quantity was manifestly present late on in the case. The heart gradually returned to the normal situation.

The skiagraph shows no outline of the diaphragm on the left. At the time of taking this, a fluoroscopic observation was also made, and one could *dimly* yet *distinctly* see the surface of the fluid a little above the level of the apex of the heart, and with each beat of the heart a wave was seen passing toward the wall. A faint lop was audible synchronous with the heart beat and heard best on deep inspiration, reminding one of the sound produced by small waves against a boat upon quiet water.

The X-ray examination in the case was most helpful in establishing the fact that the heart was returning to its normal position, and in demonstrating the presence of fluid in the pleura.

11. Taillfer—Broadened mediastinum, displaced heart, dense, area

with apex toward root of lung, Hæmoptysis, malignant disease or pulmonary tuberculosis of chronic type.

12. Ouellette—Shows clearly right side of heart. Pericarditis and endocarditis. Left base of lung compressed. Doubtful pericardial effusion.

REFERENCES :

Aron, Deutsche Med. Wochenschrift, May, 1897.
Bouchard, Semaine Médicale, Dec. 9, 23, 1896.
Bouchard, British Medical Journal, Vol. I., p. 99, 1897.
Bouchard & Claude, Epitomi B.M.J., 131, II. 1898.
Beale & Walsham, The Practitioner, July, 1901.
Determann, Deutsche Med. Wochen,. No. 16, 1900.
Finny & Watson, British M. Journal, I. 633, 1902.
Grumnach u Wiedemann, Deutsche M. Wochen., No. 34, 1902.
Haughton, Dublin Medical Journal, June, 1902.
Holzknecht, Lucas Gräfe & Sillem, Hamburg.
Kienbock, Wiener Klinisch Wochen., No. 22, 1898.
Montz, Münchner M. Wochen., No. 29, 1900.
Rowland, S., British M. Jour., Vol. 2, 1896, 925; Vol. 2, 1896, 1237.
Stubbert, Philadelphia M. Journal, 6 Jan., 1900.
Williams, In various journal articles, also book publications.

THE VALUE OF X-RAYS AS A DIAGNOSTIC AGENT IN THORACIC DISEASE.

By W. F. Hamilton, M.D.

Owing to the difficulty of reproduction of plates in connection with the above article, same are unavoidably omitted this month, but they will appear in an early future issue of this Journal.

RESUME OF RECENT LITERATURE ON THE TOXÆMIA OF PREGNANCY.*

BY

DAVID J. EVANS, M.D.,

Lecturer in Obstetrics and Diseases of Infants, McGill University, Montreal.

Many new and interesting facts and theories associated with the physiology and pathology of pregnancy have been advanced recently, chiefly by German writers, and it is my object to attempt to present some of these to you this evening. This paper may thus be considered as a review of recent contributions to our knowledge of some of the conditions associated with pregnancy.

At the IX. Congress der Deutschen Gesellschaft für Gynækologie, which was held in Giessen in May, 1901, Fehling[1] of Strassburg, in opening the discussion on Eclampsia, formulated, as representing the state of our knowledge of that condition, the following propositions:—

I. By puerperal eclampsia we understand a distinct, well characterized disease, which is associated with the reproductive period of women.

II. No characteristic placenta of eclampsia exists.

III. There is no pathognomonic form of kidney disease associated with eclampsia.

IV. The view that eclampsia is associated with dilatation of the uterus is discarded.

V. Albuminuria but very rarely fails to be present in eclampsia.

VI. There is no specific eclampsia liver.

VII. A conclusive characteristic anatomical condition is not found in eclampsia.

VIII. The view of the infectiousness of eclampsia is up to the present completely unproven.

IX. Bouchard's view that at the basis of eclampsia there lies an increased toxicity of the blood plasma, with a diminished or increased toxicity of the urine, is not tenable.

X. The explanation of eclampsia as a heptotoxæmia or leucomainæmia is not proven.

XI. To produce the anatomical changes found in eclampsia there must exist in the blood current a substance which acts by exciting coagulation (necrosis) in the tissues.

XII. Eclampsia is a toxæmia of fœtal origin.

---

* Read before the Montreal Medico-Chirurgical Society, November 7, 1902.

If in the last of these propositions he includes in the word "fœtal" the whole ovum, he foreshadowed the results which recent work along this line seems to be bringing out, for the experiments and observations of the writers whose papers form the basis of my essay to-night, seem to prove that the origin of the toxin which gives rise to eclampsia, is in the cells of the periphery of the ovum, or rather, that these by their presence in the maternal blood permit the development of toxins, which produce the condition we term eclampsia.

In 1893, Schmorl[2] of Dresden, reported that in the lung capillaries of 17 cases of eclampsia he found emboli present, associated with other characteristic changes in the liver and kidneys. These emboli were not present in pregnant women dying of other diseases. He thought that the emboli consisted of epithelial-like cells and that they were of fœtal origin, being probably syncytial.

Later he added 53 other cases to his series, his findings being very much the same. He mentions also having found a similar condition in a pregnant rabbit which died of an eclampsia-like disease.

In his later paper he states that these emboli may occasionally be found in the non-eclamptic, though under what conditions he does not state.

In his opinion, the anatomical finding in eclampsia shows that some blood change occurs which results in multiple thrombosis formation. The origin of this abnormal metabolism product he cannot state, but suggests two possibilities, 1st, disease of the placenta, or 2nd, the formation of some cytotoxin.

Following Schmorl's first article, other writers report very similar observations, to a few of which I may be permitted brief reference:—

Lubarsch[3] verified the findings of Schmorl in eclampsia, but failed to note these emboli in other conditions, with one exception, a case of chorea occurring in a pregnant woman. One may note here that this condition is also associated with convulsions, which in the light of later findings probably accounts for their presence.

Kassjanow[4] found emboli 11 times in non-eclamptic parturients. In one case where pregnancy had only advanced to the 5th month they were observed, hence they do not, he concludes, result from the act of labor, and they are of normal occurrence. Kossmann[5] reports finding them in non-eclamptic women and has noted their presence in cases of hydatid moles and syncytioma maligna.

Maximow's[6] experiments with pregnant rabbits gave interesting results in this connection. Under normal conditions he failed to find these lung emboli, or syncytium-like cells, in the blood current in pregnant rabbits. On the other hand, five times he found both conditions present after he had thoroughly massaged the pregnant uterus.

Veit[7] of Leiden, was led to investigate the origin of these fœtal cells in the maternal organism, by his findings in a case of tubal pregnancy upon which he had operated.

His first paper on this subject was published in the latter part of 1901.

In the case he mentions, he was able to remove the unruptured tube with a very early ovum, intact. This was carefully prepared and serial sections made of it. In studying these he made a very interesting observation, on which his theories and future experiments are based, so I may be permitted a somewhat detailed description.

In these serial sections he discovered in a vein of the tubal wall, situated close to but distinctly separated from an intervillous space, a mass which occupied the lumen of the vessel. This mass was undoubtedly chorionic villi with their intercellular tissue, their cells of Langhan's layer, and syncytium. The walls of this vein showed intact endothelium, and in no part was there any adhesion between the villi and the vessel wall. He was able to make out two small openings in the vein wall through which the villi projected. All the veins of the neighbourhood of the intervillous spaces which were filled with villi, most of which still firmly attached to the ovum, communicated with these spaces. Everywhere these attached villi could be traced for at least a centimeter into the veins.

Being struck with the importance of this observation Veit instituted a search for similar observations on the part of others, especially to find if this condition had been noted in connection with intra-uterine pregnancy. He quotes the observations of Nitabuch, Von Rohr, Hofmeier, Virchow, Kolliker, Ruge and Webster in this connection.

Chorionic villi have been found in the veins of the serotina, occasionally so numerous as to plug the opening, and they have been traced for some distance along the course of the veins, being evidently torn free and carried along with the blood current.

Veit thus concludes, from a review of the literature that in uterine, as well as in extra-uterine pregnancy, chorionic villi may be found in the veins a considerable distance from the intervillous spaces. In his opinion, Veit found in other blood vessels quantities of free cells of the Langhan's layer, some of the vessels being completely filled with them. He notes that in these vessels the blood was not coagulated, an observation which had previously been made by Heinz. The explanation of this is that probably there exists in these cells, or else in the cells of the syncytium, a chemical agent which prevents coagulation.

He, in common with others, only found these villi and villi fragments in veins.

To this carrying-away of villi by the blood-stream he applies the word "*deportation*" to distinguish it from embolus, which it is not.

It is difficult to form any idea of just how the maternal blood first escapes from the vessels of the decidua into the intervillous spaces. Two theories predominate. The most generally accepted is that of Kölliker, that the chorionic villi can destroy the maternal tissues, *i.e.*, eat their way into the vessels by phagocytic action. Hofmeier's theory, to which Veit seems to lean, is that through growth of the ovum the surrounding maternal structures are stretched until the walls of the capillaries break, and thus form lacunæ into which the villi penetrate. As the villi develop these spaces enlarge and form sinuses, which are only in part lined with endothelium.

In this connection, Veit, in discussing why the blood fails to coagulate when poured out into the maternal sinuses, where the current must be very slow, and which are not surrounded with endothelium, this being only, as it were, on the maternal side, suggests that, as before noted, the villi act in some way to prevent coagulation of the blood.

When the villi perish coagulation does result we know, hence the probable formation of white infarcts in the placenta and also the outlining of the placental margin.

Adhesion of the placenta at term, and the firmly attached condition of the placenta often noted in abortions, are susceptible of explanation in the same way. With the death of the villi clotting of the blood takes place, this becomes organized and thus may become firmly attached to the uterine wall.

Conclusions as to the consequences of this deportation must be hypothetical in the present condition of our knowledge, though the question naturally arises, what becomes of these cells of Langham's layer and syncytial cells, and what action do they have in the maternal organism? Where in the organism these cells are destroyed is at present unknown, though in a later paper Veit makes some reference to this.

On one effect of the deportation of cells Veit feels he has sufficient ground to draw certain conclusions, that is, that they are associated with deposit of pigment in the skin, the so-called cloasma uterinum. The entrance of these cells into the maternal organism is evidently physiological and they must be associated with some physiological action.

Telegony may have some anatomical basis when one considers the fact that fœtal cells penetrate the maternal organism. The destruction and absorption of these cells gives an anatomical basis for concluding that a variety of "internal secretion" of the pregnant uterus exists. It also may account for the auto-intoxication of pregnancy.

Poten[8] has recently published an interesting paper on what he terms 'Transportation of Chorionic Villi.' Having noted the occurrence of chorionic elements in secondary malignant growths, he sought for evidence as to whether in ordinary pregnancy fœtal structures enter the maternal circulation. He describes in detail his microscopical findings in seven pregnant uteri. In all, the placenta was in situ. Two were at an early period of pregnancy and the remainder toward the end.

In every case there was evidence of the deportation of villi. The early specimens showed the migration of syncytial buds, such as are seen on young villi, as well as whole villi. In the older specimens, whole well formed villi were found in the veins of the uterine wall.

Poten considers that the villous structures found must have been only those which were in the uterine veins at the time of death, all others having been swept away by the blood current.

Like Veit, he says they are not emboli, inasmuch as they do not block the veins but pass through them, and through the heart, to be blocked in the lung capillaries.

He seems to agree with Veit in most of his theories as to the effect of this transportation, and also makes an interesting suggestion in regard to hereditary syphilis. The broken down villi from the ovum of the child of a syphilitic father, may pass thus into the blood of a not yet syphilitic mother, and may communicate the disease to her. He thus explains the apparent immunity to syphilis that is conferred in this way occasionally.

Veit[9] has recently published the results of his studies, so far, on the biological effects of the deportation of villi.

The effect of the penetration of bacteria and other cells into blood, raises the question in Veit's mind whether there is not an analogous condition in the penetration of chorionic villi.

In this connection the methods of Ehrlich and Morgenroth are naturally suggested, and have been adopted by Veit as his working hypothesis in experimentation and research.

The effects of the artificial introduction of fœtal elements into the body were first studied. Portions of rabbits' and of human placentæ were injected into the peritoneal cavity of rabbits. In the first experiments the animals quickly succumbed, but with the experience gained, the methods were rapidly improved.

With regard to these it is sufficient to state that all aseptic precautions were taken throughout, and that control experiments were always undertaken to check results by.

The placental tissue employed was finely divided, and all blood removed before the injection. With regard to the dose, it was found that the injection of six rabbit's placentæ invariably caused death in about 12 hours, so generally half this quantity was used. It was found that 12 grammes of human placenta gave the same results as three rabbit placentæ in the last third of pregnancy.

The urine of the animals under experimentation was collected with all aseptic precautions, by catheter when possible, while in the case of female rabbits the peritoneal cavity was opened, and the urine taken directly from the bladder, on account of the long urogenital sinus. The urine was examined in those cases where it was possible, at regular intervals while under observation.

The first result of this method of investigation was the finding of albumin in the urine of all cases in which placenta had been placed in the peritoneal cavity. The albumin was present in only small quantities, and usually in from 40-48 hours after the injection, when it quickly disappeared.

The significance of the albuminuria thus induced may be apparent by analogy with the conditions which give rise to immunity according to the theory of Ehrlich.

We know that the introduction of the erythrocyte of man, for instance, in the circulation of a rabbit, results in the production of a poisonous substance, against which an antitoxin (hæmolysin) is developed. Thus, Veit argues, do the cells of the ovum periphery, when introduced into the maternal circulation, give rise to the development of toxins.

It is supposed that an albuminous element of the cells of the villi combines with a lateral chain of the erythrocytes, and hence the toxin.

This toxæmia we know is not specifically placental, for, according to Veit's experiments the insertion of bits of the umbilical cord, or the muscle of a guinea-pig, into the peritoneal cavity of a rabbit, also results in albuminuria. It is thus presumable that the albumin of these, acts on the albumin of the erythrocytes similarly.

Thus this albuminuria is the result of an intoxication, in the widest sense of the word. It is probable that the combinations of the albumins of the cells of the ovum periphery, with the albumin of the erythrocytes, produces a substance which in the process of elimination evidently gives rise to a pathological irritation of the kidneys, and hence, albuminuria.

The questions which now arise are, 1st, can this toxic substance be demonstrated ? What is its nature ? 2nd, is there an antitoxin ? If so, how is it produced ?

These are difficult questions to answer in the present state of our knowledge, but Veit feels that some progress towards this has been attained. He has proved that the toxic material is not to be found in the serum, for neither the serums of animals with artificially induced albuminuria, nor the serums of eclamptic women, when injected into animals, injured them or gave rise to albuminuria.

One gathers from Veit's paper that he has obtained an antitoxin, but he does not state how, in very clear terms. He mentions in one instance preventing the development of albuminuria in a rabbit, into whose peritoneal cavity he injected placental tissue, by administering a dose of antitoxin serum beforehand.

In another instance he mentions that five days after giving a rabbit an antitoxic serum (50 grammes of placental extract) he introduced a large dose of placenta into the peritoneal cavity (6 rabbit placentæ), with the result that the animal died in 18 hours.

Veit terms the antitoxin substance syncytiolysin. He deals with the dose of antitoxin, and with the duration of the resulting immunity, but cannot as yet come to a definite conclusion on either point.

Veit then takes up the question of the relationship between this cyto-toxic albuminuria, and the kidney of pregnancy. We have known for some time that in cases of albuminuria certain definite placental changes are frequently noted. Two views as to the origin of these changes have been advanced. One view is that the placental changes are consequent upon kidney disease, while others, as Gottschalk, consider the placental changes as primary.

Veit states, rather indefinitely, that his observations permit him to conclude that in many cases of albuminuria where these placental changes had been found, deportation of villi has taken place.

In seeking to form some connection between the deportation of villi and the kidney of pregnancy, Veit reverts to his previous work on the deposit of pigment in the skin during pregnancy. He demonstrated that iron is present, dissolved out in the tissues, in such cases; reasoning that if this presence of iron in the skin is associated with the absorption of villi and the production of a cyto-toxin, then, there must be an overplus of iron present, which is not needed and leaves the body. Led by this thought he investigated the urine of pregnant women. He invariably found iron present in the urine of pregnant women in much larger quantities than in the case of non-pregnant women, who were otherwise healthy, and lived in exactly the same conditions.

To explain the presence of this iron in the serum, he reverts to laws which govern the production of antitoxines. More lateral chains are thrust out from the erythrocytes than are necessary for combination with the toxic albumin from the ovum cells, and these give rise to the immune body.

Three possibilities occurred to him as to the action of the cytotoxin. Under the influence of the absorption of ovum cells a cytotoxin is produced which, 1st, either contains iron, or 2nd, that as the result of the production of this cytotoxin, erythrocytes decompose, and iron is dissolved in the serum; or, 3rd, that cytotoxin circulating in the serum has hæmolytic properties for the erythrocytes.

This reasoning led him to examine the serum of pregnant women for the presence of free hæmoglobin. Blood was obtained from the retroplacental extravasation and also from the finger-tip. As a rule the latter source was preferred.

His results were variable, but it may be said that, in general, the serum of pregnant women is free from hæmoglobin. In labor it is not infrequently present, and occasionally it may be detected during pregnancy.

Hæmoglobin is not to be found, according to Lazarus, in normal blood; it results invariably from the action of toxins, thus its presence is associated with severe infectious disease, etc.

Veit concludes that at present we know no better explanation for the changes in the blood serum, than the union of the placental cell albumin with the lateral chain of the erythrocytes, and the production of antitoxins as the result of the absorption of these foreign elements into the blood.

He does not think that the hæmoglobin in the serum is due to hæmolytic properties of the syncytiolysin, but that probably in the formation of a cyto-toxin, erythrocytes are damaged and so hæmoglobin is set free.

In explanation of the infrequent occurrence of hæmoglobinæmia during pregnancy, Veit suggests that probably in early pregnancy ovum cells regularly enter the maternal blood, and there so much cytotoxin is formed that the after-coming cells are made harmless as soon as they enter, so that gradually a lasting absorption and a lasting production of immune bodies (cytotoxin) results, and an injurious influence is avoided. On occasion a sudden excess of ovum cells may be thrown into the maternal blood, use up all the available immune body, and then act injuriously, setting up hæmoglobinæmia, and finally albuminuria.

Transitory albuminuria is not infrequently associated with labor, and is probably due to the action of the uterus loosening villi or other cells from the ovum.

In this way may also be explained the toxæmia which sets up nausea and vomiting of pregnancy, and pernicious vomiting, for in a recent paper I called attention to the fact that nausea and vomiting of pregnancy stood in relationship to uterine contraction.

The work of Lazarus and Ponfic clears up the question as to the disappearance of the iron and of the disappearance of the erythrocytes. These latter disappear in the spleen, bone-marrow and lymph glands, without giving rise to symptoms of disease.

The free hæmoglobin appears in the liver as bilirubin, and is also thrown out in the bone-marrow, spleen and kidney cortex. As soon as the portable amount is exceeded one finds hæmoglobinacolia, and above all, albuminuria; the latter arising from the irritative action of the hæmoglobin on the kidneys. The former gives rise to the icteric condition sometimes seen (eclampsia).

It is interesting to note in this connection the views of Lange, who considers that the disappearance of the hæmoglobin is due to the action of thyroid secretion. Lange[10] explains the kidney of pregnancy as due to thyroid deficiency.

Oliphant Nicholson[11] has but recently been advocating the curative and preventive action of thyroid secretion in eclampsia.

Veit's summing up of the points I have referred to in this paper is as follows:—

"1. By introducing into the peritoneal cavity of rabbits sufficient quantities of placenta, one produces albuminuria.

2. The pigment in the skin of pregnant women contains iron.

3. The urine of pregnant women contains somewhat more iron than does the urine of non-pregnant women.

4. The blood serum of pregnant women only exceptionally contains hæmoglobin.

5. The blood serum of women in labor contains hæmoglobin somewhat oftener."

"In explanation of these facts I offer the absorption of chorionic cells, and I assume that consequently changes are physiologically produced in the blood of pregnant women, which can by sudden, or continuously increased absorption (of these cells) pass over into pathological conditions."

Veit's concluding remarks are worthy of repetition.

"To scientific obstetrics belongs not only the effort to deliver a woman by the best means, but also the correction and improvement of our knowledge of the influence of a pregnancy on the whole female organism. The more we comprehend the favourable effects of a pregnancy on a woman, so much the more shall we grasp by means of what powers nature obviates injurious results, and so much the more shall we contribute to the true welfare of womankind."

LITERATURE.

1. Fehling, Monatschr. f. Geb. und Gyn., Bd. XIV., H. 1, 1902.

2. Schmorl, *Ibid*, also Path. Anat. Uterus, Uber die Puerperaleklampsie, Leipzig, 1893.

3. Quoted by Veit.

4. Kassjanow, Diss. Inaug. St. Petersburg, 1896.

5. Kossmann, Ctbl. f. Gynakologie, S. 1218.

6. Maximow, Virchow's Arch., Bd. 151, S. 300.

7. Veit, J., Zeitschrift f. Geburt., Bd. XLIV., 1901.

8. Poten, Arch. f. Gynak., Bd. LXVI., H. 3, Abstracted in Journ. of Obstet. & Gynæcol. of the Brit. Emp., Sept., 1902.

10. Lange, Zeitschrift f. Geb. und Gyn., Bd. XL., S. 34.

11. Nicholson, O., Edinburgh Obstet. Soc., Tr. 111, 1902, and Lancet, 9,824, 1902.

ON THE ACTION AND THERAPEUTIC EMPLOYMENT OF ALCOHOL, BEING AN EPITOME OF RECENT CONTRIBUTIONS TO THE SUBJECT.

BY

A. D. Blackader, M.D.,
Professor of Pharmacology and Therapeutics, McGill University.

From the earliest times, alcohol in the form of wine or beer has been employed for its therapeutic effects. Hippocrates ordered it for his patients, and since his time, physicians of all creeds and systems have taken advantage of its action in battling with disease. The extent to which it has been employed has varied much according to the views which, from time to time, have been current; but throughout all the ages the idea that wine is a good thing for the sick and infirm has very generally prevailed.

Towards the middle of the last century, with the introduction of the experimental method into the study of the various branches of medicine, the exact action of alcohol was made the subject of extensive experimental research, especially in Germany, and its effect on the circulation, respiration, metabolism, and temperature was carefully investigated. Binz, writing in the early eighties, summarized its action as follows:—"Alcohol is an antipyretic, stimulates both circulation and respiration, and is a convenient food."

Since that date, however, our methods of investigation and our means of observation have much improved, and the truth of the statements then made as to the exact effects of alcohol on the system has been very seriously questioned by pharmacologists and by several clinical teachers. For this reason the several papers read before the Massachusetts Society last June and the symposium on alcohol which appears in the last number of the *Practitioner* (November, 1902) will be welcomed as an attempt to place before the profession the most advanced views on the action and therapeutic value of this much discussed, yet much employed drug.

On the Physiological Action of Alcohol.

The action of alcohol, so far as it has been ascertained by experimental research, is stated by Prof. Cushney to be that of a narcotic, not that of a stimulant on the nerve centres. At the same time it is to some extent a stomachic and may, under certain conditions, act as a food.

In the lower animals the action on the central nervous system is marked by depression, and the symptoms produced are not unlike those of chloral. Occasionally a transient excitation occurs due to the irritant action of the drug in the stomach, but this fails to appear when more dilute solutions are administered. In man the same depressant effect is often seen, drowsiness and heaviness passing subsequently into slumber; more usually the first effects elicited are liveliness and feelings of good-fellowship, with increased confidence in one's own powers. Symptoms of excitement marked by loquacity and exaggerated movements of all kinds frequently manifest themselves; the face is flushed, the eyes are bright, and the pulse and respiration are accelerated. Larger quantities give rise to uncertainty and incoordination of the movements; still larger amounts induce narcosis, which may pass into complete anæsthesia, and eventually prove fatal. The symptoms of excitement are much more marked when drinking is indulged in in company with others; on the other hand, if the alcohol is taken with less exhilarating environments, or in solitude, the excitement stage is much less marked, and may be entirely absent.

These effects in man have been explained in two different ways. The view, which appears at first sight to be the more natural one, is that in moderate doses it stimulates the cerebral cells to greater activity and that this stimulation is afterwards followed by depression. According to this view, alcohol acts on the cerebral grey matter much in the same way as strychnine acts on the cord. This view is widely entertained both by the laity and by clinicians. The majority of experimental observers, however, lean to the view suggested by Schmiedeberg and supported by many others, that the stimulation of the central nervous system is only apparent. According to this theory the symptoms of excitement are caused, not by an augmented vitality of the nerve cells, but by a loss of the associations which ordinarily retard the expression of mental activity. To adopt a mechanical simile, the brain may be compared to an engine fitted with powerful brakes; an acceleration of the motion may be due either to increased power of the engine or to a removal of the brakes, and it may be very difficult for an onlooker to determine which is the true explanation. Careful investigation, however, of the apparent evidences of increased mental activity under alcohol, have proved them for the most part illusory. While under the influence of alcohol the individual may be more brilliant in conversation, more witty and more social, yet is he not so careful in his statements, nor so considerate for his own dignity, or for that of others. He loses self-control, he also loses his sense of responsibility and his power of discriminating between the trivial and the important, and between the merely plausible and the actually proven. In a word, it is generally recognized that some of the highest functions of the brain are thrown out of action by alcohol administered even in moderate quantities; it seems probable, therefore, that the exhilaration observed may not be a direct action, but an indirect result of a depression of those higher centres which ordinarily control our actions and feelings. Much valuable evidence as to the effect of alcohol on mental processes has been gathered by Kraepelin and his pupils, who have shown that typesetters do a smaller amount of work and make a larger number of mistakes, with even a small amount of alcohol, than when they perform their work without this drug. Students show a lessened capacity for mental work and a smaller ability to keep the attention directed on one subject. Arithmetical calculations of all kinds are carried out slower and with more errors. In one respect only was an increased power shown, namely, in the transformation of an idea into movement. This might suggest that the motor functions are accelerated under alcohol, but another explanation is quite as probable, namely, that an ordinary movement is hampered by a series of associations and that when these are weakened by alcohol the movement may be carried out more quickly. It is noteworthy that the powers most recently acquired and most readily lost are those on which alcohol first acts; the mental operations which have become habitual are less easily impaired.

In all of these experiments the amount of alcohol taken was small, and was in no case sufficient to induce any of the more evident symptoms of intoxication. It is of interest, therefore, to note that Kraepelin found a distinct impairment of the psychical powers to persist for a much longer period than was anticipated; the average efficiency was not regained until from 12 to 24 hours had elapsed after the alcohol had been taken.

The result of these investigations strengthen the view that alcohol acts as a narcotic upon man as well as upon animals, especially since the evidence thus far brought against the view is of a very indefinite character. This view of the action of alcohol corresponds also with the effects obtained in its therapeutic employment, for it is difficult to understand what use physicians could make of alcohol in disease were it a cerebral stimulant, for no mental exertion is encouraged in acute disease; on the contrary, every effort is made to maintain mental as well as bodily rest; the room is darkened, noise is excluded and exciting conversation and reading forbidden. The truth appears to be that when the clinician applies the term stimulant to alcohol he uses the word in a different sense to that in which it is understood by the experimental observer. The same confusion was formerly met with in regard to opium. The effect of both drugs is in reality cerebral depression, which manifests itself in a condition of euphoria. Disease often loses its strongest ally when anxiety and worry are allayed by alcohol. The patient feels less concern and more resignation, not because his soul rises triumphant through the stimulant action of the drug, but because his brain is rendered less capable of dwelling on his disabilities owing to its being partially narcotized. This effect of alcohol in allaying subjective symptoms, relieving nervous strain and promoting the rest and comfort of the patient is not surpassed by that of any other drug.

The action of alcohol on the respiration has long been a subject of experimental investigation and though the results show a good many discrepancies, the evidence thus far gained is to the effect that the amount of air inhaled is generally increased by alcohol, even when no signs of excitement are displayed. We must wait for further research to determine whether this augmentation of the air inhaled is due to a direct central action or to reflexes arising from the stomach, but it may be stated that if due simply to the latter, its use as a respiratory stimulant in disease would scarcely be indicated.

Alcohol has long enjoyed the reputation of a cardiac stimulant, yet pharmacologists agree in the statement that in small doses it has little or no action upon the heart, while in larger amounts it acts as a cardiac depressant. There may be, when given in strong solution, a slight acceleration of the pulse, due to reflex action from the stomach, but beyond this, alcohol would appear to have no distinct action upon the heart itself. It has, however, a distinct action in dilating the superficial vessels, but it is noteworthy that the dilatation has little effect on the general blood pressure. Professor Meltzer suggests as an explanation of this fact, that alcohol at the same time that it produces dilatation in the superficial vessels gives rise to a constriction of those in the area controlled by the splanchnic nerves. He says, "we know that there is a mutual nervous arrangement between the peripheral organs and the splanchnic area to such an effect that every vaso-dilatation of the peripheral organs is accompanied by a proportionate vaso-constriction of the splanchnic area. The administration of a dose of alcohol which has the visible effect of causing redness and turgescence of the skin has the actual effect of distributing the blood in such a manner as to cause a vaso-dilatation in the peripheral organs, including the brain, and a vaso-constriction in the splanchnic area. It is obvious that under these circumstances the blood pressure measured in the carotid artery will not be altered."

In many infections we have a general vaso-dilatation of central origin; the patient may then be said to have "a bleeding into his splanchnic area" and blood is withdrawn from all the peripheral organs, skin, extremities, central nervous system, heart and kidneys. Such a patient may have a high rectal temperature but cold extremities, livid skin, small pulse, mental depression and may void only a small amount of concentrated urine. The administration of alcohol by producing a degree of vaso-constriction in the splanchnic area and vaso-dilatation in the peripheral organs results in the heart receiving more blood, the pulse becoming fuller, the extremities warmer, the skin flushed and turgescent, so that by increased dissipation of heat the general temperature is reduced; at the same time the patient's mind becomes brighter and his urine is increased in quantity. In short the patient is stimulated and feels better. Alcohol, according to this view, does not affect the circulation by stimulating the heart or by increasing or decreasing the general blood pressure, but by instituting such a distribution of the blood as is especially favourable to patients suffering from the conditions we have mentioned. This explanation of Prof. Meltzer, however, is as yet unproven, and must be received for the present as a very plausible explanation of clinical symptoms.

The effect of alcohol on digestion is more definite. It has been shown to alter the gastric functions in a way in which, so far as is known at present, no other drug does. After alcohol reaches the circulation a profuse secretion of fluid takes place into the stomach, it matters not whether the alcohol is given by the mouth or injected into the rectum. This fluid generally contains a considerable quantity of pepsin, but sometimes merely traces, apparently indicating that alcohol does not actually augment the secretion of the ferment but simply increases the watery fluid which carries with it what pepsin is preformed in the gland. Again, it has been demonstrated beyond question that the secretion of the stomach depends largely upon the appetite, and this upon the taste and odor of the food. Persons to whose sense alcohol and its accompanying ethers are grateful, may thus be able to digest food taken with wine better than they otherwise would. The slight irritant action of alcohol on the gastric mucous membrane also tends to promote absorption by the stomach. Clinically, however, we find that the effects of alcohol vary in different individuals, and in different conditions of the mucous membrane of the stomach, and further research is necessary before the indications for its use as a stomachic can be defined accurately.

On the Nutritive Value of Alcohol.

Discussing the nutritive value of alcohol, Professor Cushny considers that while the food value of the small quantities of alcohol, ordinarily tolerated, is insignificant, in certain cases it may be borne in quantities which may materially aid in maintaining the resources of the body, and says that there is no convincing evidence that when used for a short time in such cases it lessens the resistance to the invasion of disease. This aspect of the subject, however, was treated at length by Prof. Benedict in his paper, also read before the Massachusetts Society. His opinions may be summarized as follows:—

Formerly the opinion prevailed that alcohol, while readily absorbed was excreted unchanged, as is, for example, saccharine, and consequently could be of no benefit to the body. A most careful and exact research, however, has shown that in doses not exceeding a total of 72½ gms. (about 2½ fluid ounces) during the 24 hours, less than 2 per cent. is excreted unchanged from the body of a healthy man. This fact being established the value of alcohol as a food may be more closely studied. We know that it is very rapidly absorbed in the stomach, indeed, so rapid is its absorption, that comparatively little alcohol enters the intestines. Alcohol may, to this extent, be regarded as pre-digested, for the action of the digestive juices is not necessary to prepare it for absorption.

Obviously the simple molecule of ethyl hydroxide containing no nitrogen cannot be considered as in any sense contributing to the structure or repair of the tissues of the body. But if the law of the conservation of energy obtains in the living organism, as we have every reason to believe it does, the potential energy of the alcohol must be transformed into kinetic energy in the body; either in the form of heat, or of internal and external muscular work. That this is true is shown by experiments in which 72·5 gms. of alcohol, equivalent to about 500 calories of energy, were substituted in the diet for fats and carbohydrates. A close agreement was noted between the results obtained under the two dietaries, and when we examine the analytical data we see that there was neither an excessively rapid combustion nor was there any abnormal radiation of heat. It is therefore reasonable to assume that the energy furnished by the alcohol does aid the body in maintaining its temperature and may be of service in the performance of internal and external muscular work.

To assume the contrary we must suppose that the energy furnished by alcohol is of a different nature from that yielded by fats and carbohydrates in combustion, and this appears extremely improbable, especially when we find by experiment that the total energy transformed from a diet containing no alcohol corresponds exactly in a similar and parallel experiment with the energy from a diet in which 500 calories are furnished by alcohol. In thus furnishing food to the body it must spare either other food material, or what is still more important, body material, from consumption. A diet deficient in energy results in an immediate draught upon the tissues of the body, chiefly the fats for the lacking energy. Alcohol added to such a diet invariably lessens the quantity of the body material disintegrated. Similarly a diet sufficient to maintain the body in equilibrium when augmented by alcohol, results in a storage of fat in the body.

The contention has frequently been made that alcohol even in moderate doses influences the general metabolism of the body in such a way as either to increase or diminish the production of carbon dioxide and the consumption of oxygen. Widely varying results have been obtained on this point, but the best and most trustworthy work shows very little variation from the normal during the consumption of moderate amounts of alcohol. A more serious question is the effect of alcohol on proteid metabolism. It has been stated that the ingestion of even moderate amounts of alcohol results in a more rapid disintegration of muscular tissue but the most accurate recent experiments afford no valid ground for asserting that alcohol in moderate doses influences proteid metabolism any more than does any other carbohydrate.

When used moderately, alcohol may be said to agree with most people, its rapid absorption precluding difficulties of digestion, but when used in excess it produces, as do many of our common food materials, stomachic and other disturbances not infrequently of a serious character. It is, however, the habit-forming property of alcohol leading to its consumption in excessive and consequently toxic quantities, that brings us to a halt in our estimate of the nutritive value of alcohol. The toxic properties of alcohol are not possessed by any other common food material and consequently must be considered a drawback to its habitual use for nutriment in quantities large or small. Furthermore, if excessive doses are so disastrously toxic may we not reasonably question the effect of moderate doses, and suspect an insidious action that may not be apparent in the necessarily short chemical, physical, and physiological examination of its effects afforded by the usual experimental period. Experiments in the laboratory can never furnish the data for determining satisfactorily the effects of the persistent use of alcohol even in moderate quantities upon the general bodily and mental condition of the man. Accurate and impartial observations on this point are with difficulty obtained, but the work of Kraepelin, Aschaffenburg and Hodge, surely indicates that alcohol, even in moderate doses, has a retarding action on many vital processes, and, accordingly, should be used as a nutriment in health only with the full cognizance of such action.

With regard to the

Pathological Results which may arise from the Employment of Alcoholic Drinks.

Prof. Sims Woodhead, of Cambridge, contributes an excellent paper to the *Practitioner* (November, 1902, p. 539).

Since the time of Virchow it is evident that a complete study of the action of small doses of alcohol on healthy protoplasm must be undertaken if any adequate picture of the changes wrought by it in the system is to be obtained. Physicians have long known that the advanced cirrhotic changes found in the liver and kidney are in a large proportion of cases the result of the excessive use of alcohol; that pneumonia attacking alcoholic patients usually assumes a most virulent form, and that fatty degeneration of a most marked type is found in various organs, and that in certain nervous diseases an antecedent alcoholic history is usually obtainable. If we are thus able to trace its ill effects in interfering with, and altering the function of secreting cells, and in causing fatty degeneration of the muscles of the heart, of the gland cells of the liver, and of the pyramidal cells of the brain, are we not justified in assuming that much smaller quantities are sufficient to disturb the healthy equilibrium of these cells? The question has been raised as to whether alcohol is an aliment, or a disease exciting substance? It would be almost as rational for us to ask the same questions concerning the diphtheria toxin and enter upon a discussion as to the oxidation of that poison in the tissues and take the amount of such oxidation as the measure of its food value in doses large or small. The whole question is one not of oxidation but of the proportion of beneficial effect to the injurious action known to occur when alcohol, even in very small quantities, is introduced into the human economy.

Alcohol, like phosphorous, has an extraordinary affinity for oxygen; so great is this "oxygen hunger" that the oxidation of the fats and carbohydrates taken into the body is interfered with, the respiratory oxygen being seized upon by the alcohol, with the result that there is imperfect metabolism as the result of imperfect oxidation. Owing to this abnormal metabolism there may result an excessive accumulation of fat, not only in subcutaneous tissues, but also in many of the more internal structures of the body. It may also lead to an accumulation of fatty degenerative products in the protoplasm of the cells. In this co-existence of infiltration and degeneration we have one of the most characteristic features of alcoholic poisoning or of poisoning by substances similar to alcohol.

How alcohol acts in these cases it is somewhat difficult to determine, but that it is doing this special work every pathologist is now perfectly satisfied. Where fatty degeneration takes place two other sets of changes may almost invariably be met with. In aged people there is usually a great tendency to the deposition of calcareous matter in tissues of low vitality. This is perhaps best seen in the muscular coat of the blood vessels in which fatty degeneration of the muscle fibres has occurred. This calcification is frequently met with in alcoholics, not necessarily in patients who have been drunkards, either intermittent or habitual, but in those who have taken what they call moderate quantities of alcohol regularly up to the latter part of adult life, or to the earlier periods of old age. Indeed, so numerous are the deaths from vascular disease among this class of patients that the position assumed by some of the important assurance societies is fully justified by these changes alone.

These fatty and calcareous changes may be associated with a second series, an increased formation of fibrous tissue in certain active tissues and organs. In some cases the fibrous change must be regarded as of primary origin and the result of direct irritation, as for instance the changes induced in the connective tissue cells of the liver, by the alcohol brought in the portal circulation. More commonly, however, it is a secondary process associated with the occurrence of fatty degeneration. At one time cases of pure fibrosis were ascribed to everything but alcohol, but more recent observations have convinced many pathologists, the writer among the number, that the production of "arterio-sclerosis" in many cases can be attributed to nothing but the use of alcohol, and not always, or necessarily, in very large doses. One of the points on which I have always insisted in connection with alcohol is that it acts as a cumulative poison, and that it may exert its cumulative action not only as regards alcohol itself, but also in connection with other poisons such as arsenic, phosphorus, etc., and in connection with the production of disease-producing organisms, and even in connection with the ordinary metabolic waste products of the body. These waste products, as we know, are of a distinctly toxic character, and if retained exert very deleterious effects upon tissues. Alcohol appears to accentuate the action of these waste products in two ways; first, by increasing or exaggerating their effects, the two poisons together doing more damage than either one alone is capable of doing; and in the second place, as the result of an interference with the activity of the secretory cells, we have the removal of the various waste products obstructed, and a vicious circle set up, which can end only in the degeneration of the tissues and the death of the patient.

In alcohol also we have a substance that has a most marked effect in intensifying and accelerating disease processes. As an outcome of a wide experience there has certainly been a great revulsion against the indiscriminate use of alcohol in cases of typhoid fever and the same is true of the indiscriminate use of alcohol in pneumonia. Experiments go to prove that alcohol acts directly on almost every part of the body, and that the higher the function of a tissue, the more readily are its cells affected. Moreover, the cells acted upon by alcohol are profoundly modified as regards both their functional activity and their metabolism. It is found also that in many tissues, especially in the cells of the connective tissue series and in the leucocytes, where it is impossible to make out any well marked structural or ordinary functional changes, there are profound modifications as regards the susceptibility to the invasion of disease-producing bacteria, and to the action of the poisons produced by these bacteria, that practically render the patient who takes alcohol much more susceptible to disease of various kinds than is the non-alcoholic.

This paper of Prof. Whitehead is certainly a very strong arraignment of the action of alcohol. Is it too strong? In reference to its

Therapeutic Employment in Surgery.

Mr. Pearce Gould, surgeon to the Middlesex Hospital, writes: (*Practitioner*, November, 1902, p. 569). "For many years I have dispensed almost entirely with alcohol as an aid in surgical treatment. As a student I saw it used almost as a matter of routine for every kind of surgical malady except head injuries, and in my early years I naturally followed the practice of my teachers; but as soon as I made trial for myself of the effects of withholding alcohol, I found how entirely overrated its value was, and how gravely mistaken had been the teaching . . . I believe that experience with patients suffering from various forms of infections exactly coincides with the results obtained in experiments upon animals. Not only are individuals who are addicted to alcoholic excess possessed of a much diminished resistance to all forms of infection, but the administration of alcohol to those already infected not only fails to add to their power to resist disease, but even lessens that power. Even in cases of uncontrollable suppuration, I have found nothing but good from withholding all alcohol. Exhaustion is, I believe, hastened and not delayed by alcohol."

It is more difficult to determine the value of alcohol in cases of profound shock and collapse. Mr. Gould thinks it is of some value in shock, in helping to tide over the acute emergency—but considers that it is not of the same value and importance that the horizontal position, rest, internal heat, morphia, and strychnine are, and that it never produces such a striking beneficial result as the introduction of normal saline fluid into the circulation does. Referring to its use in cases of advanced cancer, he says, in some patients it is found that a small quantity of well diluted spirit, given at about the same time as the evening dose of morphia will secure a better sleep than does the morphia alone. Entire distaste for food is another distressing symptom not rarely met with, and sometimes a little beer or wine will help these patients to take food, and so promote their well-being. But anything like a free use of alcohol is strongly to be deprecated: it is as pitifully injurious as is the free, unrestricted use of morphine. Either drug in moderation may be useful, but in excess only adds to the patient's misery.

On the Use of Alcohol in Medicine.

Under this heading Sir William Broadbent writes, what we consider to be a clear and impartial statement of the advantages and disadvantages accruing from its therapeutic employment. His views may be thus epitomized:

We are daily called upon to consider the administration of stimulants, on the one hand in acute disease, and on the other in conditions of mere debility of varied causation, and in chronic disease of every kind, and it is necessary to ask ourselves the question, What do we expect of them, and in what way are the good effects we look for produced? It is also always necessary when employing a remedy to think, not only of the immediate advantage we aim at, but of the remote effects which may be produced. An alcoholic stimulant may be continued indefinitely when the conditions which led to its being recommended have long passed away; we have thus to bear in mind the possibility of establishing an alcoholic habit and the results that may follow from such a condition.

The action of alcohol which we call stimulant is, an indirect one, and its most conspicuous evidence is a dilatation of the arterioles and capillaries allowing a freer supply of blood to all the organs. There is also a concomitant increased action of the heart, due partly, if not mainly, to the diminished resistance in the peripheral circulation. A temporary general acceleration of the circulation, and increased afflux of blood to the brain and viscera; this constitutes the action of alcohol of which we take advantage clinically.

In considering the employment of stimulants in the treatment of debility and chronic disease generally, the first point is to take care not to do harm. It may be said at once that alcohol has no place in the treatment of weakness in childhood; in the anæmia and chlorosis of adolescence stimulants are of a very doubtful advantage, and this or that wine recommended as containing iron often does more harm than good. The most dangerous employment of stimulants at any period of life is when they are allowed to be taken for the relief of depression, or of sensations described as "sinking," or of subjective feelings of weakness, even if accompanied by weakness of the pulse. The immediate effect is no doubt distinct and agreeable, but reaction is inevitable. If stimulants taken on medical advice are ever responsible for the establishment of the alcoholic habit it is under these circumstances. While there is a great tendency to exaggerate the necessity of stimulants in debility, however caused, and to attribute to them an influence in promoting the recovery of strength which they do not possess, there can be no doubt that properly employed they are of great value; but as an invariable rule, they should only be taken with meals. Their beneficial effects may be estimated by the increase in the amount of food which is taken with their aid. In choosing a stimulant, therefore, for a given case, the best criterion is not the chemical composition, but the effect on the appetite and digestion. We do not recommend Burgundy, under the idea that red wine makes red blood, nor order a given wine because it is said to contain iron. When stout or ale is taken the volume of liquid drunk at a meal is much increased, and we should make sure that it is taken in addition to the food and not instead of it. In all cases the food must largely predominate in amount over the stimulant. The biscuit and glass of port or sherry, so often allowed in the course of a morning, do not come within the designation of a meal, and the practice is not a legitimate employment of stimulants.

Renal disease of any kind may almost be regarded as a bar to stimulants, and the same may be said with regard to disease of the liver. In phthisis and tubercular diseases stimulants may, perhaps, render us some service.

In acute febrile disease the profession has gone from one extreme to the other in the use of stimulants under the influence of the dominant theories of the day, or following the example and teaching of some distinguished physician, or enthusiastic advocate. The general doctrines which possess the medical mind at the present moment have little direct bearing on the administration of alcohol, and on the whole, stimulants are given with judgment and with moderation. In their administration the following rules, in Dr. Broadbent's opinion, should guide us:—In no case should they be given in the early stages; on the contrary, they should be withheld as long as possible, even when the patient has habitually taken alcohol in excess and may be thought to have become dependent upon it. The safest course is to withhold them until it is clear they are necessary. As the disease advances the indication for their employment is not muscular prostration and weakness, still less any sense of weakness of which the patient may complain. We must be guided mainly by the pulse, and by its frequency and low tension rather than by its apparent strength. The effects of the first few doses should be carefully watched; if the stimulant is doing good the pulse ought to be less frequent, steadier and longer, namely, better sustained and less dicrotic. The state of the tongue is another indication; when this is dry, and especially when there are sordes about the lips, teeth, and palate, alcohol does good. When stimulants promote sleep, and diminish restlessness and agitation, they are of service. Converse effects, excitement, sleeplessness, and increased frequency of the pulse, would constitute contra-indications as would also evidence of gastric irritation. The odor of the breath should always be noticed. As a rule in pyrexia, the vinous or spirituous smell disappears from the breath with extraordinary rapidity; when it lingers, or especially if the foul after-odor of the spirit-drinker is recognized, the stimulant should be withdrawn, and should it be considered necessary to give it again, the dose should be small and the effects of it carefully watched. The amount of stimulant which can be taken with advantage will vary with the character of the disease and the severity of the attack. If it has not been given unnecessarily early, and if it has been increased cautiously, it is very rare that more than 6 oz. of brandy or whiskey, or the equivalent of this amount of spirit in the form of wine, will be required in enteric fever, even in a severe and protracted case. Typhus seems to have more need of stimulants, but does surprisingly well on comparatively little. In pneumonia the stimulant may have to be pushed rapidly, but six or eight ounces should be considered a very large amount. Ten ounces a day represents, in my opinion, a maximum likely to be of real service in any form of acute disease. I have seen much more given with apparent impunity, and especially, perhaps, in septicæmia. The amount of stimulant to be given has been spoken of in terms of brandy and whiskey, but effects can often be obtained by substituting champagne once or twice in the 24 hours, which cannot be got from spirits, and port or other wine may have a valuable place during convalescence.

On the Employment of Alcohol as a Beverage,

the editor of the *Practitioner* thus writes:—

"We have the testimony of Sir Samuel Wilkes, Sir H. Thompson, Professor Sims Woodhead and Dr. Edmunds, founded in each case on their personal experience. Evidence of this kind from such men must, of course, carry great weight, and the fact that their testimony is substantially to the same effect gives it a cumulative force which might well seem to make it conclusive. Sir Samuel Wilkes states that he was practically a teetotaler throughout his working life. Sir Henry Thompson, after total absence for six months, found that he had got rid of severe hemicrania and rheumatism, to which he had previously been subject. When he began to decline into the vale of years, remembering the old saw that wine is the milk of old age, he gave it a trial, but soon came to the conclusion that the aphorism was a fallacy. Dr. Edmunds, who in earlier life never took more than one fluid ounce of alcohol, freely diluted, in any day, and for the last forty years had taken none at all, is convinced that in regard to his own health and the efficiency of his work, he has gained everything for his patients and himself and has lost nothing by his disuse of alcoholic beverages. Professor Sims Woodhead believes total abstinence enabled him as a student at the same time to win laurels in the athletic field and prizes in the class room. In the former sphere it dispensed him from the necessity of training, and in the latter it helped him to do the best work of which he was capable. He feels that it is owing to the same cause that he can still get through as much work with as little effort as most men.

On the other hand Sir Samuel Wilkes recognizes that the desire for an alcoholic drink of some kind is a natural instinct in man which has not been extinguished by civilization, and is not shocked by the fact that many good and thoughtful men consider that good wine taken in moderation soothes irritabilities of temper and brings the company at the dinner table to the same level of good humour. On this point we may be allowed to quote the evidence of another eminent witness. Sir Lauder Brunton, speaking of a city dinner where each course seemed to excite the appetite for the one which succeeded and was accompanied by a wine so carefully selected that it gave zest to the food, while the food appeared to give additional zest to the wine, says: "I went to the dinner exhausted with overwork, irritable in temper, and believing that city companies were wasteful bodies, who squandered money that might be employed for useful purposes and that they should be abolished. I came away feeling strong and well, with an angelic temper and firmly convinced that the city companies had been established for the express purpose of giving dinners and ought on no account to be interfered with. Nor was the good thus effected of a transitory nature; the irritability of temper which had disappeared in the course of dinner did not return and the morning afterwards, instead of waking with headache and depression, I awoke strong, well, and ready for work, and remained so for a considerable length of time."

The statistics given by Dr. Ridge show that abstainers have a somewhat longer expectation of life than others. It is not length of days, however, that counts, but the work that is done before the night comes. If wine gladdens the heart of man without disordering his brain or dulling his moral sense, that in itself is, in Mr. Morris's opinion, a good reason for using it; if a man finds that it chases away the cares of business when he is at home and makes him more cheerful in the midst of his family and friends, some physicians may regard it as his duty to take a small quantity to produce these effects. If, on the other hand, a man finds that he cannot take even a small quantity without detriment to his health or his temper, it is equally his duty to abstain. There are those who, like Cassio, have very poor and unhappy brains for drinking, or who, like Dr. Johnson, can abstain but cannot be moderate.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Diet in Granular Kidney.

VON NOORDEN. "On the Dietetic Treatment of Granular Kidney." *Brit. Med. Jour., Nov. 1, 1902.*

Any light which can be thrown upon the treatment of granular kidney is very welcome, and all who know of the keen interest taken in the metabolism of patients with Bright's disease by the author of this paper will gladly receive the publication of his views formed after several years of special study of such cases.

Von Noorden states that there are three criterions for determining whether a certain diet suits the diseased kidneys or not. The observation how the disease is influenced by this or that diet yields by far the most important criterion. As a second criterion the intensity of the albuminuria may be considered, while the excretory power of the diseased kidneys—a factor of the utmost importance, and yet one not receiving enough attention clinically—may be regarded as the third.

The questions discussed are as follows:—

(1) How much albuminoid substances are allowed in granular kidney?

(2) Is the quantity of albumin of any influence?

(3) Shall the patient drink much or little?

The answer to the first question, based upon clinical observation and experiments, goes to show that it is not necessary or justifiable to strictly withhold almost all albumin in the food of patients suffering from chronic nephritis. The strength of the patient must be maintained, and that practice which is perfectly correct in acute nephritis is a grave error in the treatment of the chronic form. Putting the answer of this question in a more concrete form, it may be said that nitrogen to the amount of 14 to 15 grams per 70 kilograms of body weight may be excreted with ease, but when the amount of albumin ingested requires that more than the above amount of nitrogen per 70 kilogram weight has to be excreted, then elimination becomes uncertain, then the amount of albuminoid material is too much.

In reviewing the answer to the second question, one finds that the conclusions formed in the studies devoted to this topic are as much at variance with the older teaching as are those under the first division. When the uric acid excreted does not go beyond 10 or 12 grams per day, elimination goes on all right. Animal tissues rich in nucleins are forbidden, *e.g.*, sweetbreads, liver, kidneys and all glandular organs. Von Noorden states that the kidneys make no distinction between corresponding quantities of albumin of meat, eggs, milk and vegetables. As between white meats and red meats there is no choice. On experimental as well as upon chemical tests, "it is absolutely no consequence for the eliminatory functions of the kidney whether one gives red or white meats to the patients."

The third question is answered from the standpoint of the cardiac condition, which is of such importance in chronic nephritis. If the vascular system is inundated with water the work of the heart is increased, hence the fluids ingested are limited and not more than 1½ litres per day of water are allowed. Such a limitation of water may be followed by an increase in the albuminuria, but Von Noorden claims that the advantages secured are greater than the disadvantages. In order to avoid all danger of retention of solid uric acid substances it is advisable, one day in every week, to let the patient drink a large quantity of water, 2½ to 3 litres. The total quantity of food taken should be such as to satisfy the needs of the patient, and overfeeding must be avoided as adiposity is a grave complication of Bright's disease.

Myelopathic Albumosuria.

BRADSHAW. "Myelopathic Albumosuria." *The Lancet, Vol. II., 1902, pp. 929.*

SIMON. "Observations on the Nature of the Bence Jones Albumin." *Amer. Jour. Med. Sciences, June, 1902.*

BOSTON. "A Rapid Reaction for Bence Jones Albumose." *Ibid, Oct., 1902.*

HAMBURGER. "Two examples of Bence Jones Albumosuria associated with Multiple Myelomata." *Johns Hopkins Hos. Bull., p. 39, 1901.*

Historical. The discovery of "albumosuria" was made by Bence Jones in 1847. A report followed in 1848; and in 1850, W. MacIntyre, in whose practice the case occurred, gave the clinical report, the diagnosis in which post mortem was "osteomalacia fragilis ossium."

According to Simon, there were 23 cases recorded in the literature up to June of this year. With the increase of light from the advancement of clinical and pathological study, cases of "osteomalacia" or "mollities ossium," though recognized for many years, were divided into two groups. To the first group, which maintained the name osteomalacia, belonged these patients who were "young, mostly women; recovery temporary or permanent was not infrequent, and the essential lesion was absorption of lime salts and the replacement of the bony structure by a simple type of connective tissue." In the second group tho patients were generally well beyond middle life, "recovery did not take place and the essential lesion was the invasion of the bone by cellular growths of the connective tissue type, either generally diffused through the bone or forming circumscribed tumours and leading to the absorption of the osseous structure." For this condition Rustizky in 1873 introduced the term "multiple myeloma." In 1885, as a means of differential diagnosis between osteomalacia and multiple myeloma, it was thought that the discovery in the urine of the Bence Jones albumose would suffice, since it was then thought that body was always present in multiple myeloma. However, in the light of present knowledge, this view is abandoned, and those cases which have *albumose in the urine and some affection of the marrow seem to form a group of themselves.*

Dr. Bradshaw describes these cases, marking out their individuality, and names the disease *Myelopathic Albumosuria.* From the endorsation received by this article in the editorial column of the *Lancet* of October 4, 1902, it would seem that this term will find its way in due time into the Nomenclature of Diseases issued under the authority of the Royal College of Physicians, London.

Etiology. Upon this point but little can be said. The disease has been found more frequently in men beyond middle life. Syphilis was present in two of the cases several years previously.

Morbid anatomy and pathology may be considered under two heads:

(1) The changes in the skeleton.

(2) The changes in the urine.

Certain bones are invaded by a soft mass of new growth, the proper osseous tissue undergoing absorption. The growth may be confined to the interior of the bone, or break through the compact tissue and form tumours of considerable size. The bones involved are the ribs, sternum, and bodies of the vertebræ, rarely the pelvic bones or skull, and yet more rarely the long bones of the extremities. The new growth is soft, gelatinous, vascular, and looks like red marrow. Microscopically it is composed chiefly of round cells with little or no intracellular substance. Fat globules are often present in the cells and occasionally spindle cells and here and there islets of cartilage.

In structure and clinical progress the growth seems to resemble sarcoma, but it differs from common sarcoma in its invasion of several parts of the skeleton simultaneously, and in showing no tendency to form metastases in other organs. It would appear to be from its position and structure an outgrowth or hyperplasia of the normal marrow.

The Urine.

(1) It may be milky in appearance.

(2) It is markedly increased in quantity in some cases. Hamburger's case averaged between 2,000 and 3,500 c.c.

(3) The specific gravity may be very high, and it is generally acid in reaction.

(4) It undergoes ammoniacal decomposition very slowly.

(5) It contains a proteid closely resembling albumin but differing in the following most obvious particulars. (*a*) It coagulates at a remarkably low temperature, 58° C. This is the reaction which Simon regarded as the most characteristic general reaction. (*b*) The coagulum disappears on boiling, and reappears on cooling. (*c*) The coagulum, which forms on treatment with cold nitric acid, disappears on boiling and reappears on cooling. (*d*) Hydrochloric acid readily coagulates it. (*e*) The most recently reported cases confirm the view that it is a crystalline body.

Simon points out that turbidity appears in such urine between 52° C. and 53° C. At 55° the liquid is quite opaque, while at 75° or 80° a coarsely flocculent precipitate forms, and when left to itself falls, leaving the supernatant fluid quite clear.

Dr. Boston describes a rapid reaction for Bence Jones' albumose. He claims that the reaction probably most reliable is that with lead acetate and caustic soda for the detection of sulphur. It is stated that many chemists regard the presence of loosely combined sulphur as a pre-eminent feature which distinguishes Bence Jones' albumose from other albumosuria. A modification for economizing time is clearly described.

The chemical nature of this substance has long been a dispute. While good authorities, on the one hand, classify it as an albumose, Simon, Magniss-Ley and others, on the other hand, are forced to conclude that it cannot be an albumose. It is a body *sui generis.* It is probable that it is more correctly placed under the water soluble globulins.

Before passing on to note the views held concerning the origin of this substance, it is important to note that a considerable difference of opinion obtains with respect to the reaction of this substance to heat, and hence possibly arises some of the different views as to its nature. The present knowledge is imperfect, but it is very near the truth to state "that the substance is one closely allied to albumin and probably is somewhat less complex in its constitution"; and Bradshaw says we may conveniently designate it as the Bence Jones albumose.

How is this substance formed? Three views have been presented in answer to this question.

(1) That the proteid constituents of the food, through altered abnormal metabolism, furnish this substance first described by McIntyre as "a superabundance of animal matter in the urine."

(2) Some abnormal metabolism taking place in connection with the new growths in the bones, possibly by means of a ferment.

(3) That the loss of function of the bone marrow accounts for the albumosuria.

It appears from the observations made that the substance under discussion is really formed in connection with the new growths, although there is some evidence contrary to this. Simon suggests that with the abnormal proliferation of the plasma cells of the red marrow there is associated some deviation from their physiological function, and this in turn is expressed in the Bence Jones substance. He argues that on account of its being foreign to the body, it would appear in the urine. Experiments on dogs with this substance leads one to the belief that it is a foreign body, and when introduced intravenously it may be found subsequently in the urine.

Symptoms. The onset may be insidious with increasing debility; painful areas about ribs or sternum or back, or marked anæmia may be present. Pain and debility may give place to comfort and increase of strength for a time. Tumours about the bones may be found, or there may be a peculiar yielding of the ribs. Spontaneous fracture of the femur is reported in one case; muscular atrophy has also been noted.

Prognosis is always bad; although there may be remissions.

W. F. Hamilton.

Reviews and Notices of Books.

VISITING LISTS FOR 1903.

The close of the year is always brought to our notice by the arrival of our annual visitors, the physician's visiting lists; and like everything else that comes to us regularly and without effort on our part, we perhaps little appreciate the amount of trouble it saves to the average practitioner in the course of the year.

The Visiting List of P. Blakiston's Son & Co., has now reached the fifty-second year of its publication. It is issued in the same form as formerly, but contains, in addition to the usual fund of useful information, pages on incompatibility and the immediate treatment of poisoning. It is supplied in the same styles as in past years—a single volume for 25 or 50 patients per week, selling at $1.00 and $1.25; and also for 50 to 100 patients in two volumes. This firm publish also perpetual and monthly editions.

The Medical News Visiting List for 1903, published by Lea Brothers & Co., is issued in four styles adapted to any system of records and any method of keeping professional accounts. It contains a great deal of printed data of the most useful sort and can be obtained in weekly, monthly or perpetual forms, dated or undated. Each style is in a wallet-shaped book, provided with pocket, pencil and rubber.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, November 7, 1902.

Geo. E. Armstrong, M.D., President, in the Chair.

Rodent Ulcer Treated by X-Rays.

Dr. Girdwood showed a young woman whom he had been treating for rodent ulcer, extending from the inner angle of the right eye to the edge of the cheek. The disease, when first seen, showed much induration with raised rounded edges of a bluish colour; and several portions gave evidence of extending growth by the presence of several recent nodules glistening through the skin outside the margin of the ulcer. For three weeks she had been treated with what is known as high currency, with but little improvement. Then, after a week in the country she had been subjected to 43 treatments with X-rays for ten minutes each time. The thickening began to disappear and has continued to do so, the ulcer commencing to heal from the inner side. After a week's interval, during which the improvement continued, she again had two weeks of treatment, then another week's interval, followed by a week of treatment, and finally, two weeks interval and three days treatment. There was still some thickening to be removed, but the improvement gave hope of a cure. The tube used was of the "hard" variety, excited by a current of about 100 volts and 4 amperes.

A Case of Addison's Disease followed by Death.

Dr. F. G. Finley gave the following history of the case:—The patient was a young man of 24, admitted to the Montreal General Hospital for an abscess of the back which was opened. This had been present for twelve months, and during the last seven months he had had to give up work on account of muscular weakness. When first seen, a few hours before he died, he presented all the typical features of Addison's disease. There was an extremely deeply-bronzed skin, most marked about the feet and lower part of the legs. The buttocks and genitals were very dark, almost black, as were the axillæ. A few pigment spots were seen on the mucous membrane of the mouth, gums, and inner lining of the cheeks, and two or three moles present on the body were quite black. There was little vomiting and persistently weak pulse during the fortnight he was in the hospital. He had also subnormal temperature.

Dr. John McCrae exhibited pieces of the skin of the scrotum and abdomen and both adrenal bodies. Although the man was of comparatively fair complexion the skin was very dark, being almost of the negroid content. The autopsy had shown tuberculosis of both lungs of old date and a comparatively recent miliary tuberculosis. The suprarenal bodies were both tuberculous, the left being most affected. It was enlarged, caseous, in places suppurating, and it (as did also the right) proved microscopically to be almost replaced by tuberculous material.

Dr. W. E. Deeks said the case was interesting in connection with the one that had been reported in April before the Society, in which a cure had been effected by the use of suprarenal extract. The case since then had remained in perfect health. He asked if suprarenal extract had been tried in this case or if any attempt had been made to relieve the cardiac symptoms.

Dr. Finley was unable to answer the question, not having seen the case until just before death.

Fracture of the Ribs followed by Emphysema with a Fatal Termination.

Dr. McKee reported the clinical history of this case, which was that of a youth who was crushed between the beams of an elevator, remaining there until the beams were pried apart. Extensive fractures of the ribs were produced with puncture of the parietal pleura, the visceral pleura being intact. Within an hour after the injury emphysema of the subcutaneous tissues of the left side, the back of the neck, the scalp, face and upper arms appeared.

Dr. McCrae stated that at the autopsy it was at first difficult to understand why so many petchial hæmorrhages had occurred about the face and neck, but it was seen that the body had been caught in such a way as to shut off the venous return while allowing of the supply of arterial blood to the head and neck. Crackling due to the emphysema could be felt over the areas already described, and as low as the knees. The affected areas were swollen and bulging and in the tissues the bacillus aërogenes capsulatus was found.

Brief Notes on a Case of Acute Pancreatitis.

Dr. W. A. Gardner presented a case report of a man who had walked from his ship to the ambulance and was dead within an hour and a half. His chief complaint was headache and vomiting, but no diagnosis was made during life.

Dr. McCrae submitted the pancreas of the patient and gave the notes of the autopsy. The heart was found moderately dilated and the pancreas acutely necrotic. In the latter organ localized small hæmorrhages were made out both superficially and deeply.

An Unusually Large Ventral Hernia.

Dr. J. Alex. Hutchison presented the report of this case which will be published later.

The Etiology of Eclampsia.

Dr. D. J. Evans read a paper with the above title. See page 941.

Dr. W. W. Chipman thought one of the chief results of this paper was in showing the line along which observations were being made in the study of eclampsia. All knew that formerly this was done is rather an empirical way, remedies being sought for and when found vaunted for a time, only to fall into disuse. During the past seven or eight years, beginning with the work of Bouchard, a more scientific standpoint had been assumed and work done on auto-intoxication. The speaker thought the time had come when the term eclampsia should be dropped and puerperal intoxication used instead, as had been done by many societies already. In reference to Veit's views on the physiology of the placenta and especially with regard to the discharge of fœtal cells into the maternal blood system, this was a new idea, although, of course, all admitted a certain reciprocity going on between the fœtal and maternal cells. Breeders of horses believed that if a well-bred mare was bred to an underbred horse, that mare was spoilt for future well-breds.

Dr. Chipman thought that even the term puerperal toxæmia might include more than one condition. He referred to a case reported by Bell in the *Journal of Gynæcology* for September, in which the changes in the liver were identical with those of yellow atrophy, and also to two cases of his own, one of which was similar to Bell's in having acute yellow atrophy of the liver, while the other was of the renal type and recovered. He urged the importance of doing an autopsy in every case of eclampsia where possible, in order that the morbid anatomy of the condition might be scientifically studied.

Dr. Wesley Mills, speaking with regard to telegony, said that the views Dr. Chipman had presented were generally held by all breeders, but when put to the actual test of scientific investigation they had broken down. Nevertheless, it was difficult to believe that this view of telegony, so widely spread amongst breeders, was without some foundation. One could see in a general way the influence between the fœtus and the mother; and while the influence of the mother on the fœtus had been carefully studied, the other side had been too much neglected. While the theory of auto-intoxication was extremely important, he would suggest that a condition of the blood might exist which was not to be traced to one or two organs but to the general changes in metabolism.

Dr. Robertson would like to know whether the last speaker or the reader of the paper had ever known of eclampsia occurring in the lower animals. If it did occur the theory of Veit would receive much support by experiments conducted with this purpose in view. The speaker, in an experience of seven cases of eclampsia, had been struck with the suddenness of onset of the attacks. This point, he thought, was difficult to explain by the theory of Veit.

Dr. Maude Abbott would like to know whether the examination for pigmentation had been made often, and if the hæmoglobinæmia was often recognized as preliminary to the albuminuria, also whether any of the other organs besides the skin were examined for iron.

Dr. J. C. Cameron valued the paper as showing the trend of modern influence and the line along which modern observations were going. We were back to the old story, however, that we were dealing with a toxæmia for which there had been a great many theories advanced, each of which explained some cases, but not one of which could explain all. Perhaps the truth of the matter was that grouped under the term eclampsia were many different conditions produced by different toxines. If the theory with respect to the poisoning of the maternal blood by the deportation of fœtal cells were correct, it would lend support to the idea of emptying the uterus rapidly to remove the cause of poisoning. The speaker himself was convinced that there were a great many different toxines, and referred to a case reported by Wilson of Birmingham, in which there seemed from the history and clinical signs no reason to question a diagnosis of eclampsia, and yet post mortem a suppurative pneumococcus meningitis was found. He believed that in the future, cases of puerperal toxaæmia would be differentiated and broken up into groups. and probably with the institution of a more rational method of treatment.

Dr. Reddy, while approving of discussing these theories as a stimulus to the profession, failed to see how they added anything practical to the treatment. Even were the deportation of cells proved to be a fact it would not be possible to estimate the likelihood of convulsions setting in. In the meantime, our efforts should still be directed towards watching for those indications which we knew to be of danger, admitting that in some cases the condition occurred without any warning.

Dr. Evans, in reply, said that he agreed with nearly everything Dr. Chipman had said, and particularly in regard to the word eclampsia being unsatisfactory. In thinking over this deportation theory and trying to fit it to the cases which had come under his notice, there had been two just similar cases; and it seemed to him that a possible explanation lay in the fact that when a poisonous organism attacked a system it was probably the weakest part that suffered first. Hence, where the kidneys were not up to the standard they would be the first to suffer, while in other cases it might be the liver. With regard to the application of the theory to the occurrence of convulsions, this was explained by the uterine contractions loosening, as it were, the attachments of the villi and thus pouring out a fresh quantity of these cells into the circulation, a quantity sufficient to overcome all the immunizing influence of the body at the time.

With regard to treatment Strogonoff of St. Petersburg, had probably obtained the most extraordinary results. He claimed that the condition was an infectious disease, and treated the cases with absolute rest, administration of oxygen, free ventilation of the room, and sedatives in sufficient quantities to quiet the patient, never allowing her to be handled or touched except under anæsthetic. Thus he got the uterus quieted down as quickly possible and the poison thrown into the circulation had time to be eliminated.

With regard to the favourable effects of pregnancy, Veit had only mentioned this in a very casual way, but the speaker thought all had come across women in very poor health who had improved during pregnancy, the improvement sometimes being lasting.

Dr. Evans was unable to answer with regard to eclampsia in animals. The iron pigment had been found in the skin in those cases in which there was hæmoglobinæmia, but he did not know whether it was also present in the organs.

Dr. Mills stated that he had not himself seen those cases which resemble eclampsia in animals, but they were well known in the literature of comparative medicine, and he had heard veterinary surgeons report them. They occurred in animals that had seemed to be in unusual vigour up to the time of parturition, and in bitches at least, where convulsions occurred after parturition, it was noted that they had been usually overfed. He thought it would be of advantage if one went back and took up some of the theories that had been cast aside, such as the nervous and blood pressure, and worked them out.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

EDITED BY

JAMES STEWART,
A. D. BLACKADER,
G. GORDON CAMPBELL,
FRANK BULLER,
H. A. LAFLEUR,
GEO. E. ARMSTRONG,
J. GEORGE ADAMI,
WILLIAM GARDNER,
F. G. FINLEY,
F. J. SHEPHERD,

WITH THE COLLABORATION OF

C. F. MARTIN,
J. M. ELDER,
D. J. EVANS,
A. E. GARROW.
T. J. W. BURGESS,
J. W. STIRLING,
F. A. L. LOCKHART,
W. F. HAMILTON,
E. J. SEMPLE,
H. S. BIRKETT,
KENNETH CAMERON,
C. W. WILSON.
A. G. NICHOLLS,
W. W. CHIPMAN.

VOL. XXXI. DECEMBER, 1902. NO. 12.

VIRCHOW'S SUCCESSOR.

It is a severe strain to which to subject any individual to appoint him as a successor to one of the great Masters in his particular subject, for it is inevitable that comparison should constantly be drawn and that the world should criticize how Elijah's mantle sits upon Elisha.

Virchow was so unquestionably the first of pathologists and will so assuredly be classed among the immortals, that we have little wonder that Professor Marchand, notwithstanding the great name he has made for himself in the course of the few years during which he has been head of the Pathological Institute at Leipsic, declined what is regarded as the first and most important Pathological Chair in Germany, and, we may say, in Europe. In Johann Orth, who has for long been professor at Göttingen, so far as regards teaching and depth of knowledge of his subject the authorities appear to have made a most excellent selection. Orth has made for himself a great mark as a morbid anatomist. His text-books upon Pathological Diagnosis and upon Special Pathology held a first place for accuracy and thoroughness in treatment. After all, it cannot be expected that anyone in the present generation should be a first authority on many subjects as were Virchow, Huxley and others of the last generation.

We have no doubt that Professor Orth will add materially to his great reputation now that he is in Berlin, and will draw thither the best of the younger workers to study under him. And even if, according to report, he resembles his predecessor in a certain difficulty of approach and impatience, if not severity, towards the workers in his laboratory, that treatment of juniors has become so traditional in certain German centres as not to be a serious hindrance.

ON THE PREVENTION OF TUBERCULOSIS.

Under the Presidency, of His Excellency, Lord Minto, an influential meeting was held a few days ago to inaugurate in this city a Committee or Association for the study of the condition of the tuberculous poor in our city, and the encouragement of all methods whereby the spread of this disease may be checked and those already suffering from it may receive due care.

At this meeting, quite the most remarkable address was that of Dr. A. J. Richer. His study of the statistics of consumption and other manifestations of tuberculosis in our city, and his estimate of the number of cases which, recognized or unrecognized, are constantly present in our community deserve to be in the hands of everyone interested in the welfare of the city. And when we remember that the disease is so distinctly preventable, and that by compliance with the laws of hygiene and with certain very simple rules, other communities are rapidly reducing the extent of the ravages of this disease, it is obvious that this movement to establish an association of the above mentioned nature is by no means premature.

Judging from the remarks of other speakers, we are glad to see that it would seem intended to proceed cautiously in the matter and to work, more especially, by familiarizing the public with the dangers of the disease and the means of arresting its spread and by strengthening, as far as possible, the hands of our provincial and municipal authorities. We think it well that this aspect of the movement was placed in the forefront even although we urgently need one or more hospitals and sanatoria for the treatment of our cases and hope sincerely that these will be established.

With the great number of already existing charities in Montreal, however, we are doubtful whether it would be good policy to make any general call upon the charitable public to support such an annual contributions. It would be better could one or two wealthy men come forward and not merely build, we would not say necessarily a complete sanatorium, but certainly the nucleus of such, and building it, endow the portion thus established. There is and has been in the past a great tendency in Montreal and elsewhere for those charitably disposed, recognizing the needs of the community in one or other directions to build and equip hospitals and like institutions and to leave it to others to find the means necessary for the maintenance of the same in succeeding years. The result is that slowly but steadily the number of individual calls to help on this or that good work is becoming so considerable that the amount available to properly carry on individual charities is collected with increasing difficulty, so that each new charity tends to diminish the efficiency of those already existing. It is a delicate matter to advise about such things, for advice may seem to imply ungenerous criticism of work accomplished with the highest motives, work by which the community benefits most materially. Yet the signs of the times are undoubtedly that in the near future he will be considered to accomplish the most good with his benefactions who does not place all of them in land and buildings, but makes his gift with the express stipulation that while one-half is employed in building, the other half—or thereabouts—is utilized as an endowment fund.

In pointing this out, we by no means wish to throw cold water upon the newly formed association. On the contrary, we are in full accord with all the speakers at the recent meeting, and recognize thoroughly that the spread of tuberculosis is a blot upon our civilization, and that it is essential to encourage every means of arresting that spread. The Association has our hearty support; we do but feel it necessary to emphasize what seems to be already realized by those who have been the movers in this work, that great care must be taken lest in making an advance in one direction, we arrest advance in others.

CHOLELITHIASIS.

A formal pre-arranged discussion forms one of the most interesting and instructive features of a medical convention. Those who take part come prepared to give the results of their experience and an epitome of the latest work done relating to the subject.

At the meeting of the Canadian Medical Association in September last, one of the largest gatherings assembled to listen to and take part in the discussion on Cholelithiasis. It was opened by Dr. McPhedran, of Toronto, in a most elaborate and thoughtful paper, which appears in the present number of the JOURNAL. Dr. McPhedran put the subject of cholelithiasis, its varieties, complications and sequelæ in such a clear and concise form that everyone present felt that their memories were refreshed, and that they were able to grasp the great and somewhat complicated question in a clearer light.

Dr. A. D. Blackader then took up the medical treatment, also published in this issue, and discussed it in a most scholarly and scientific spirit. After a brief review of the physiology of the liver, he gave a carefully prepared review of the known action of drugs on that organ, and their influence, so far as known, upon the formation of gall-stones. He showed that some of the old, so-called, stimulants of the liver really retarded the outflow of bile; and, while the salts of soda were mild stimulants, the tauro and glyco-cholates were the most effective. The two all-important factors in cholelithiasis, slowing of the flow and infection, were duly emphasized and their relative importance indicated. The influence of diet and the importance of exercise were also discussed.

The surgical side of the discussion was ably presented by Dr. Ross in a paper covering the ground most thoroughly, but to one or two of the general sweeping statements made, we must take exception. Should an operation be advised as soon as a diagnosis of gall-stone in the bile passages is made. We should most emphatically answer, no. Internal treatment should first be given a chance. Medication and dieting can accomplish much in many cases. In the majority of cases of gall-stone disease no treatment is required because no symptoms or inconvenience follow. We all know young people who have suffered during a period of months or years from recurring attacks of gall-stone colic and then remained perfectly free from symptoms for years together. Let us then give the use of medication a chance and, if the circumstances of the patient permit, let the waters of Karlsbad have a trial.

Operative treatment is demanded in acute purulent cholangitis, in chronic obstruction of the common duct, and in chronic obstruction of the cystic duct, and is indicated when the internal and bath treatment have failed and the constantly recurring attacks of pain render the patient miserable, unable to earn a living and in danger of acquiring the morphine habit. Operation is also indicated when there is a suspicion of cancer, and when perforation of the bile passages has occurred.

The surgeon must always be guided largely by the clinical history of the case. The actual findings during a physical examination are frequently disappointing—some enlargement of the liver and occasionally jaundice. As a good working rule it may be said that comparatively early surgical interference is the safer course to pursue. There are, on the other hand, definite contra-indications to operation. Operation should not be undertaken in cases of acute obstruction of the common duct, in carinoma of the gall-bladder, in frequently recurring attacks of jaundice followed by the passage of small stones and perfect health during the intervals. It is to be avoided, if possible, in old people, in diabetics, and in people suffering from heart and lung diseases, renal insufficiency, and general arterio-sclerosis.

In regard to the technique of operation, two points seem of first importance, namely, the emptying of the stomach and intestines to prevent the possibility of embarrassing difficulties in unforeseen complications, and the use of calcium chloride in large doses beforehand to prevent hæmorrhage.

The propriety of removing the gall-bladder more frequently than has been done, is yet a debatable question, and the use of a lumbar drain in all cases seems to us, as advocated by some surgeons, unnecessarily severe and seldom called for.

The general feeling of the meeting was that while the surgical treatment of gall-stones in the absence of malignant disease was most satisfactory, yet that operative measures were indicated only in a well defined class of cases, and that the medical and dietetic treatment should first receive a fair and judicious trial.

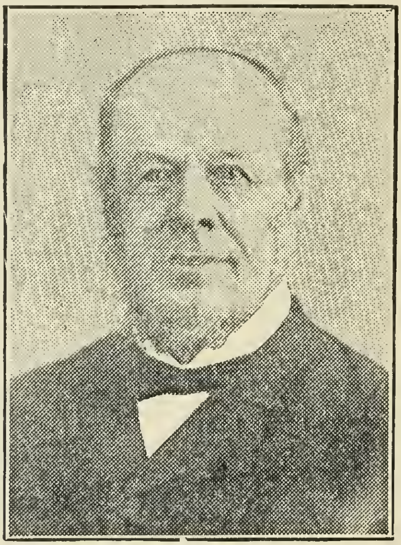
Discussions by physicians and surgeons of pathological lesions in which medicine and surgery are intimately associated, are always interesting and beneficial. We cordially commend these articles to the attention of our readers.

Obituary

THOMAS CHRISTIE, M.P., M.D.

Dr. Thomas Christie, M.P., died at his home in Lachute, on August 5th, 1902. He died at a good, full age, falling asleep in the ripeness of years like a tired child at the close of a long summer's day. A man of correct habits and uniformly good health, he enjoyed the activities of life almost to the last. For less than one week was he confined to bed, senile pneumonia having set in. There he lay quietly, and for the most part, painlessly, while "the last golden sands of a golden life were running out."

Born in 1824, in Glasgow, Scotland, he came to Canada when three years of age, with his father who settled near Lachute. There, young Christie grew up, attending the common schools in the neighbourhood. He entered the Medical Faculty of McGill University in 1844, and graduated in 1848. Among his professors were Drs. Holmes, Hall, Robertson, Sutherland, Campbell and McCulloch, men who helped to make McGill what she is to-day. The lectures at that particular time were held in what is now called the old Arts building, for lack of a more suitable place. This was previous to the occupancy of the Côté Street building. Dr. William Wright, Emeritus



Professor of Materia Medica of McGill, and the late Dean of the Faculty, R. Palmer Howard, were his classmates; and Dr. Wright pays him the following tribute:—"My general memories of the late Dr. Christie while at college were very pleasant. He was an earnest, plodding student, and won the good opinion of those who knew him best, meriting the success he attained."

Sir William Hingston, also a fellow-student and a life-long friend, has this to say of him:—"At the threshold of my medical studies I had the privilege of becoming acquainted with Thomas Christie. His last year was my first, but circumstances drew the two (senior and junior) students together, and the friendship of 1848 grew and strengthened to the last. Thomas Christie was a painstaking student, and carried off the prize for chemistry in his year. His opinion on medical subjects was of the highest value, as it was the result of honest thought and reflection. I could not sum up my impressions of a noble character better than by saying that in all my friend's relations, social and professional, he was emphatically the Christian gentleman."

During the deardful ship fever epidemic in 1847 at Point St. Charles, Dr. Christie was one of the assistant physicians, and did noble service. In 1848, after graduating, he settled in Lachute, where for fifty years he was a hard working and successful practitioner, winning the respect and love of all. In his early days he had many hardships to undergo, having long journeys to travel on horseback, roads and carriages being unknown at that time. He had to amputate limbs alone, having to administer his own anæsthetic. His practice extended all through the lower Ottawa Valley. Four of Dr. Christie's sons and one son-in-law are graduates of McGill.

Dr. Christie was elected to the Canadian House of Commons in the Liberal interest in 1875, and represented the county of Argenteuil (save for a brief period) up to the time of his death. He was a faithful and conscientious member of parliament, and held the respect of his colleagues on both sides of the House. The following tribute is from the pen of a former colleague in the House:—"The death of Dr. Christie, M.P. for Argenteuil, removes one of the worthiest men who sat in Parliament. He was a Liberal of the old school and his demise makes the world much poorer. Although elected as a supporter of the Laurier Government, and, although he gave the Government faithful support, he often chafed under things that were done, things that he did not regard as compatible with Liberal principles. In certain matters he felt that justice and his conscience demanded a protest, and so he rose in Parliament, where his voice was not often heard, and protested strongly against what he considered wrong."

Dr. Christie was an earnest Christian, and was for many years an honoured Elder of the Presbyterian Church and Superintendent of the Sunday-School. He was a strong advocate of the temperance cause and very liberal in supporting all worthy objects. In his professional career he frequently spoke a word in season to the sick and dying and tried to follow the example of the Great Physician. He belonged to the stern old Sabbath-observing Scotch school which is rapidly passing away, and which the world can ill afford to lose. His was a useful, blameless life, and he died full of those honours which good men cherish, and in the enjoyment of the respect of as wide a circle of friends and acquaintances as is ever possessed by public men.

BINDING LIST AUG 1 1942

R
11
M937
v.31

The Montreal medical journal

Biological
& Medical
Serials

PLEASE DO NOT REMOVE
CARDS OR SLIPS FROM THIS POCKET

UNIVERSITY OF TORONTO LIBRARY